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Ignace District Fisheries Management Plan

Background Information and Optional Management Strategies

1987 to 2000


A Summary



Ministry of
Natural
Resources

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Ignace District Fisheries Management Plan

Background Information and Optional Management Strategies

1987 to 2000

A Summary



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Introduction

PURPOSE

The purpose of fisheries management planning is to identify how the fisheries resource within the Ignace District will be managed. Both long term management direction to the year 2000 and a five year implementation schedule showing short term management actions will be identified. Annual work plans will be developed from the priorities established in the implementation schedule.

The development of a district fisheries management plan is undertaken within the overall resource planning and management system of the Ontario Ministry of Natural Resources (Figure 1). The fisheries management plan will implement strategic program policy direction from the Ignace District Land Use Guidelines and test it through detailed resource analysis. It will provide the basis for revisions to the strategic program policy where appropriate, and will describe how the strategic program direction from the Ignace District Land Use Guidelines will be carried out.

The purpose of this document is to summarize the resource information contained in the detailed background information document and to introduce optional management strategies and tactics. The public is asked to review this report and provide input on the information contained herein. Comments provided will be considered in the evaluation and selection of preferred management actions.

FISHERIES MANAGEMENT PLANNING PROCESS

The development of a fisheries management plan for the Ignace District will represent the final product of a six step systematic planning approach outlined as follows:

Step 1: Preparation of the Terms of Reference;

Step 2: Identification of Specific Program Objectives and Targets from the Ignace District Land Use Guidelines;

Step 3: Collection and Analysis of Background Information and Identification of Issues and Problems;

Step 4: Identification of Optional Fisheries Management Strategies and Preparation of a Summary Document;

Step 5: Development of a Draft Fisheries Management Plan;

Step 6: Development of a Final Fisheries Management Plan.

The public will have an opportunity to review and comment on the documents produced (Summary Background Information and Optional Management Strategies document and Draft Fisheries Management Plan) during steps 3 through 6.

DETAILED BACKGROUND REPORT

A detailed background information document has been prepared which contains information necessary for the development of a fisheries management plan for the Ignace District. Included in the document is information on the fisheries resource, the users and levels of use of the resource and problems and issues in managing the district fisheries resources. The size of this document prohibits printing and distribution in large numbers, however a copy is available for public review at the Ignace District office.

Figure 1

District Fisheries Management Planning And The
Ministry of Natural Resources Planning System.



Background Information

THE RESOURCE BASE

Perspective

The Ignace District is one of six administrative districts in the Northwestern Administrative Region of the Ontario Ministry of Natural Resources (Figure 2). The district encompasses a total area of 11,520 square kilometers (1,152,000 hectares) of which almost one fifth (200,000 hectares) is water covered. Sturgeon Lake, one of the largest inland lake trout fisheries in Ontario, comprises ten percent of this water area.

The population of the Ignace District totals 2500 people. Ninety-four percent of the people reside within the Township of Ignace. The remainder live in the unorganized communities of Valora, English River, Allanwater, Silver Dollar, and Savant Lake.

Ninety percent of the land within the Ignace District is crown land. The remaining is patented or private land with the largest portion consisting of three blocks, each 275 square kilometers, owned by Abitibi-Price Incorporated.

Two primary watershed divisions occur in the Ignace District, the Hudson Bay Drainage Basin and the Lake Winnipeg Drainage Basin. The Lake Winnipeg Drainage Basin covers most of the district with only the northeast corner being in the Hudson Bay Drainage Basin. These primary watersheds are divided into secondary divisions which are further broken down into tertiary and quaternary (fourth level) watersheds. Ignace District has four tertiary watersheds either wholly or partially within its boundaries comprised of 19 fourth level watersheds.

Deposits of glacial debris located throughout the Ignace District has made the area rich in aggregates needed for roads and other developments. The deposits are underlain by the Canadian Shield with several greenstone belts having high to moderate potential for mineral extraction. The majority of the Ignace District is within the Boreal Forest Region with principal tree species being black spruce and jack pine. The climate of this area provides a frost free period of 80 days on average with a growing season from May to mid October providing an average of 162 growing days.

The majority of the activity in the Ignace District is natural resource based. These activities centre around the logging, mining and tourism industries. The Ignace District Land Use Guidelines identifies objectives for forestry, mining, provincial parks, tourism, access roads and crown land recreation, all of which are associated to some degree with these industries. These objectives and resource management plans associated with them will have some influence on fisheries management.

The Ignace District is a composite of portions of six forest management units. Two are Forest Management Agreements (FMA's) where a company contracts with the Ministry of Natural Resources to undertake forest management practices (roads, harvesting, regeneration and tending), three are Crown Management Units (CMU's) where the Ministry of Natural Resources is responsible for forest management practices, and the sixth is a company forest management unit for which an FMA is to be negotiated. In addition there are three patented blocks belonging to Abitibi-Price Incorporated for which the Ministry of Natural Resources has no control over forest management. Figure 3 shows the locations of these areas and road networks which generally are a result of timber harvesting.

There are currently two existing provincial parks in the Ignace District and an additional two areas have been recommended for park status (Figure 4). Sandbar Lake Provincial Park is classified as a recreational park and Bonheur River Kame as a nature reserve. The Turtle River and Brightsands River areas have been recommended for waterway park status. An extension to the boundaries of Sandbar Lake Provincial Park has been proposed, which will encompass the area shown to the east of highway 599.

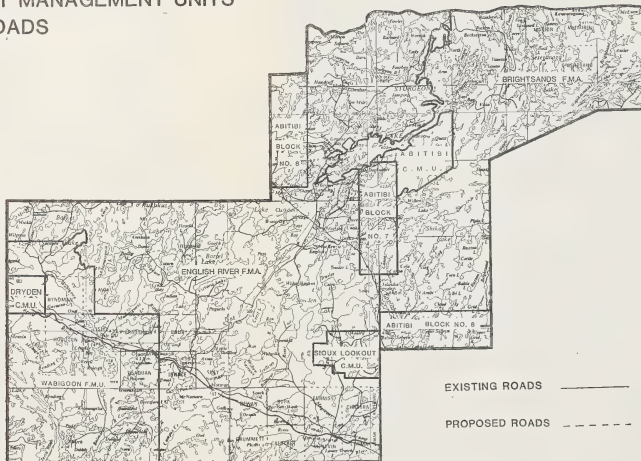
A crownland recreation program was implemented in 1984 within the Northwestern Administrative Region of the Ministry of Natural Resources. The intent of this initiative was to encourage non-Ontario based non-residents to use existing tourist facilities and thereby contribute to local and provincial economies through use of Ontario's fishery resources and to generate revenue from non-resident use of crown land. In addition, this program involves the designation of areas closed to non-resident

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FOREST MANAGEMENT UNITS AND ROADS



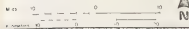
EXISTING ROADS —————

PROPOSED ROADS - - - - -

FIGURE 3

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PROVINCIAL PARKS AND AREAS CLOSED TO NON-RESIDENT CAMPING

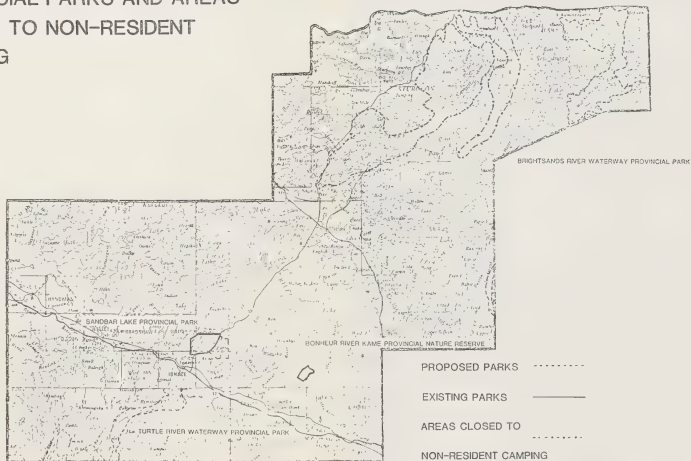


FIGURE 4

camping (Figure 4), to redistribute use from sensitive fisheries.

All of the above factors combine to influence the fish resource by affecting things such as lake productivity, fish species distribution, access to waterbodies and the distribution of users. Subsequently a series of zones to assess the fishery and management efforts is being proposed (Figure 5). These zones appear to offer a reasonable separation of areas having similar characteristics. An attempt has also been made to establish boundaries which can be relatively easily identified. The management zones are briefly discussed later in this document and for reference purposes mentioned throughout the document.

Lakes which straddle the Ignace District boundary have been assigned to either the Ignace District or the neighboring district for the purposes of fisheries management. A lake was assigned to the district which contained the majority of the lake area or if access to the lake was more readily available through that district.

The Resource

The Ignace District contains a total of 3,702 lakes with a total surface area greater than 204,800 hectares. Sturgeon Lake is the largest waterbody and one of the most complex in the district covering an area of 21,400 hectares or approximately 10 percent of the total lake surface area. There are 70 known coldwater lakes (Figure 6) of which 63 have been surveyed and 250 known warmwater lakes (Figure 7) of which 153 have been surveyed. In total 68.1% of the lake surface area has been surveyed (Figure 8). In addition there are 44 major rivers¹, comprising a total area of over 3700 hectares, located in the district.

The major fish species inhabiting lakes and rivers in the district are walleye, northern pike, lake whitefish, yellow perch, lake trout and smallmouth bass. Walleye, northern pike and yellow perch are dispersed throughout the district but the majority of the larger lakes containing these species and the heavier fished lakes are located in the Barrel Lake zone (Figure 5). Few lake trout lakes exist in the Sesaganaga

Lake, Shikag Lake and Sowden Lake zones as indicated by the coldwater lakes shown in Figure 6. The majority of the smaller, more sensitive lake trout lakes are located in the Agimak Lake zone, while the majority of the larger lake trout lakes are located in the Barrel Lake and Sturgeon Lake zones. Lake whitefish are found in both warmwater and coldwater lakes throughout the district. Smallmouth bass were an introduced species in the area. The timing or extent of their introduction is unknown. Smallmouth bass now reproduce in a number of lakes located throughout the Ignace District. Brook trout and rainbow trout have also been introduced into some small lakes in the district. Natural reproduction of brook trout has occurred in several of these lakes. This is not the case with rainbow trout which have subsequently been dropped from the district's stocking program. The feasibility of continuing the stocking of brook trout will have to be considered in view of the high costs involved, the fact they are reproducing in some waters and that other fishing opportunities are available.

The potential yield for coldwater is 186,320 kilograms per year (kg/yr) and for warmwater is 460,142 kg/yr for a total potential yield for all waters managed by the district of 646,462 kg/yr (Table 1). The allowable yield for walleye (166,198 kg/yr), northern pike (143,934 kg/yr), lake whitefish (73,185 kg/yr), yellow perch (49,590 kg/yr), lake trout (40,110 kg/yr), smallmouth bass (10,011 kg/yr), and brook trout (983 kg/yr) comprise 25.7, 22.3, 11.3, 7.7, 6.2, 1.5, and 0.2 percent of the total potential yield respectively (Figure 9).

RESOURCE USE AND PROJECTIONS

The main uses of the fisheries resource in the Ignace District are as follows:

- i) sportfishing - residents (individuals who reside in Ontario for at least 7 months of the year) and non-residents (individuals whose principle residence is located outside of Ontario)
- ii) commercial fishing (bait)
- iii) commercial fishing (food)
- iv) tourist operators
- v) non-consumptive users

¹ Major rivers are those which show as double lines on a map of 1:50,000 scale.



PROPOSED FISHERIES MANAGEMENT ZONES

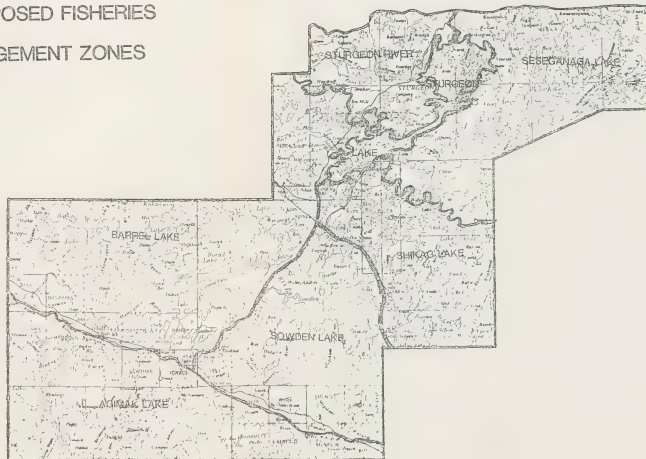


FIGURE 5



KNOWN COLDWATER LAKES

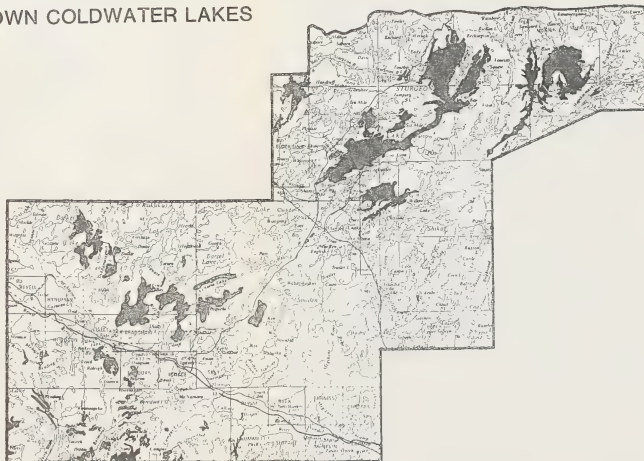


FIGURE 6

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KNOWN WARMWATER LAKES

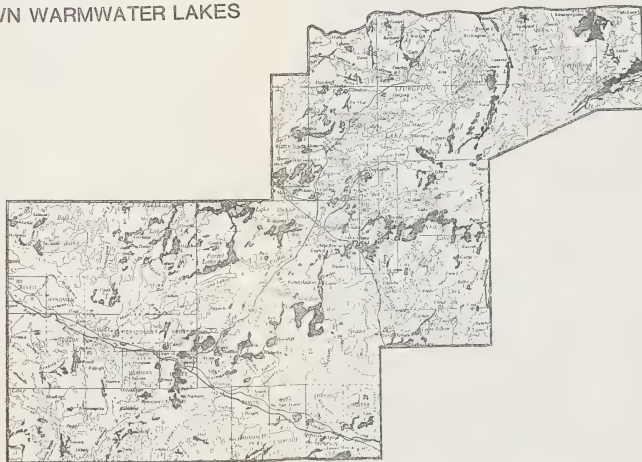


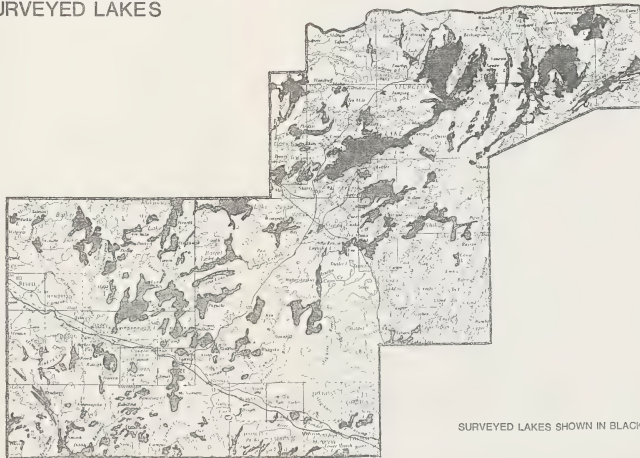
FIGURE 7

IGNACE DISTRICT

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SURVEYED LAKES



SURVEYED LAKES SHOWN IN BLACK

FIGURE 8

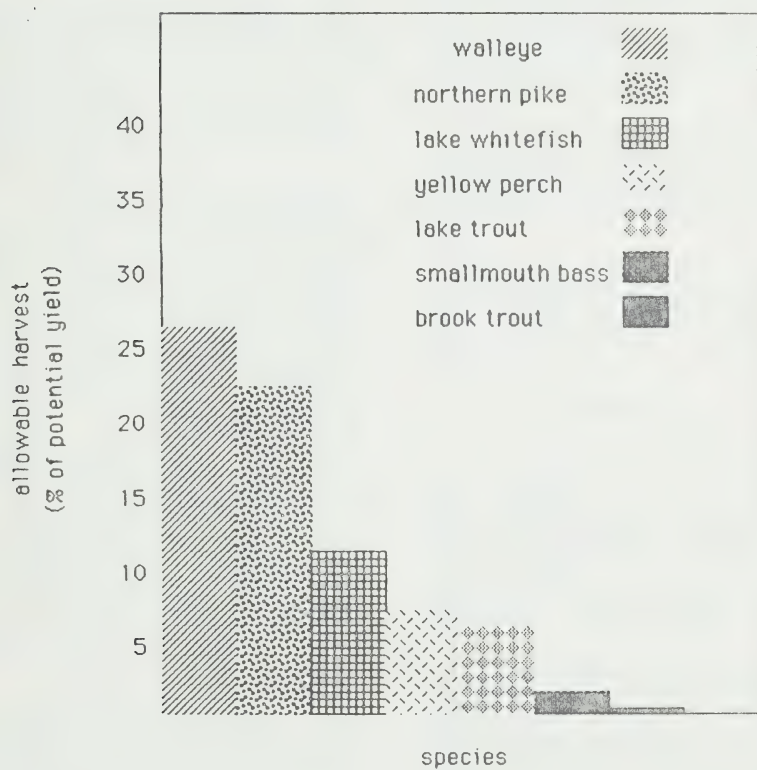
TABLE 1: SUMMARY OF FISHERIES RESOURCE DATA

Allowable Yield By Species (kg/yr)											
LAKES*	Number	Total Surface Area (ha.)	Estimated Total Potential Yield (kg/yr)	Allowable Yield By Species (kg/yr)							
				Brook Trout	Lake Trout	Lake Whitefish	Northern Pike	Smallmouth Bass	Walleye	Yellow Perch	Total
COLDWATER											
Surveyed	63	72044	167334	946	35706	31358	33881	1220	38721	18151	160073
Partially Surveyed	5	2718	4786	28	978	932	978	0	1258	512	4686
Unsurveyed Known	2	174	358	0	89	0	0	0	61	0	150
Unsurveyed** Unknown	?	6421	13606	0	3247	1386	2312	33	2044	535	9562
Total Coldwater	70+	81357	186284	974	40110	33676	37171	1253	42084	19198	174471
WARMWATER											
Surveyed	153	67353	223626	0	0	30424	54152	6870	67296	26845	185587
Partially Surveyed	5	775	2736	0	0	520	662	369	694	60	2305
Unsurveyed Known	92	12361	45947	0	0	0	9420	0	12713	0	22133
Unsurveyed Unknown	?	42973	151696	0	0	8565	35095	1514	35522	819	81515
Total Warmwater	250+	123462	424005	0	0	39500	99320	8753	116225	27724	291540
Total All Lakes	1641	204919	610289	974	40110	73185	136500	10011	158309	46922	465011
STREAMS											
Coldwater	1	7	36	9	0	0	9	0	0	0	18
Warmwater	43	3725	36137	0	0	0	7425	0	7869	2668	17982
Total Streams	44	3732	36173	9	0	0	7434	0	7869	2668	18000
Total All Waters	1685	208551	646462	983	40110	73185	143934	10011	166193	49590	484011

*Information presented is for lakes over 10 hectares in surface area.

**Information shown for unsurveyed unknown waters, both warm and cold, was extrapolated using a percentage of the surface area of lakes that are unknown as to species composition. Therefore an estimate of the total surface area for warmwater and coldwater could be derived but an estimate of the lake numbers could not.

FIGURE 9 ALLOWABLE YIELD BY SPECIES



i) Sportfishing

The major sport fish species sought by anglers in the district are walleye, northern pike and lake trout. Smallmouth bass, brook trout and yellow perch are taken but to a much lesser degree. The preferred warmwater and coldwater species are walleye and lake trout respectively.

The 1980 Provincial Angler Survey estimates indicate that 22,500 anglers fish in the district each year for a total of 170,000 angler-days. Approximately 73% of the fishermen and 65% of the angler-days are non-residents of Ontario. The number of non-residents fishing in the district appears to have increased steadily since 1970.

The expected distribution pattern of anglers in the district can be obtained by reviewing criteria such as road access, location of boat caches and cottages (Figure 10) and tourist resorts and outpost camps (Figures 11). When comparing these in relation to the proposed management zones it becomes apparent that the majority of the anglers should be found within the Barrel Lake zone (Figure 5). This would be followed closely by the Agimik Lake and Sowden Lake zones. The limiting factor influencing distribution of anglers to the Shikag Lake and Sesegana Lake zones is the lack of direct access with most of the lakes being accessible only by air. Distribution of anglers to the Sturgeon Lake zone, although serviced well by tourist outfitters and easily accessible, has probably been influenced to some degree by the large size of the lake. The lack of direct access and few tourism facilities has limited the angler distribution to the Sturgeon River zone to some extent.

Ignace District creel survey data (1978-1982) estimate the average weight per fish by species at 0.72 kilograms for walleye, 1.58 kilograms for northern pike and 0.86 kilograms for lake trout. Based on the 170,000 angler-days and harvest reported in the 1980 Provincial Angler Survey the total district harvest of sportfish by anglers is 437,240 kilograms (Table 2). Estimated walleye, northern pike and lake trout harvests are 260,640 kg., 142,200 kg. and 34,400 kg. respectively. Non-resident anglers account for 71% of this harvest.

Sportfishing combined with commercial fishing brings the current total district harvest to 457,672 kilograms of fish. Sturgeon Lake, which has 10% of the water area and allowable yield in the district, accounts for 2% of the current harvest (Table 2).

Projections to the year 2000 are that the present resident angling pressure will remain static and that non-resident participation will increase by approximately 25% for an overall increase in angler-days of 17%. The estimated angler effort in the year 2000 is expected to be about 198,000 angler-days (59,000 residents and 139,000 non-residents).

The demand for sportfish is expected to increase in proportion to the increase in effort. It is estimated that there will be an angler demand of 514,535 kilograms by the year 2000 (Table 3).

Sportfishing demand combined with commercial fishing will bring the projected total district harvest to 559,397 kilograms. Sturgeon Lake will account for 3% of this harvest (Table 3).

ii) Commercial Fishing (Bait)

There are currently 44 baitfish harvest blocks in the Ignace District. Forty-three of these were allocated to 13 licence holders in 1985. In addition, one licence was issued for two small lakes to a specific tourist operator for the purpose of supplying bait for the use of the operator's guests only. Principle species harvested are: pearl dace, finescale dace, redbellied dace, fatheads and suckers.

The average annual reported harvest for 1981 through 1985 is 92,827 dozen baitfish. Since the number of angler-days to the year 2000 is expected to increase by 17% it is assumed that the demand for baitfish will also increase. An increase of 17% to approximately 108,600 dozen baitfish would meet this demand.

iii) Commercial Fishing (Food)

There were nine lakes commercially fished in the Ignace District in 1985. Only one licence was issued for each lake. Seven of the nine licences are held by non-natives. The commercially fished lakes are: Barrel Lake, Basket Lake, Bell Lake, Indian Lake, Lake of

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BOAT CACHES AND COTTAGES

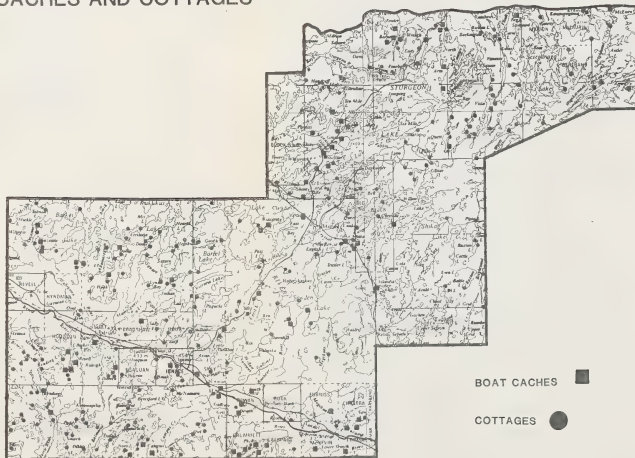


FIGURE 10



COMMERCIAL TOURIST OPERATIONS

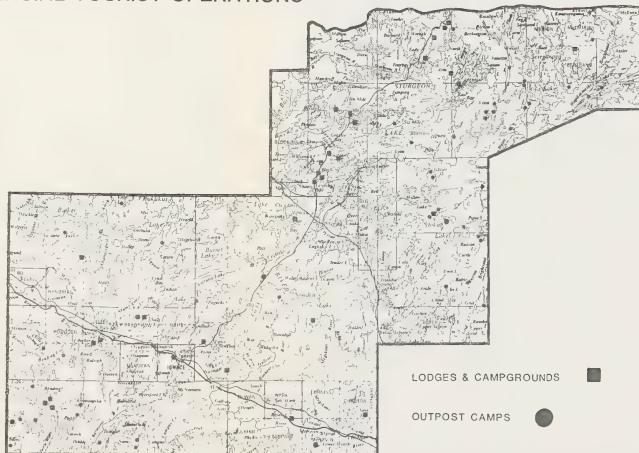


FIGURE 11

TABLE 2: CURRENT HARVEST LEVEL BY USER GROUP

WATERBODIES	SPECIES	SPORT HARVEST (KG/YR)		COMMERCIAL [*] HARVEST (KG/YR)	TOTAL HARVEST (KG/YR)	ALLOWABLE YIELD (KG/YR)
		RES	NONRES			
Sturgeon Lake	walleye	21	143	276	440	12840
	n. pike	5	257	75	337	10031
	lake trout	690	1048	218	1956	10031
	whitefish			7516	7516	9630
	y. perch					5216
	Total	716	1448	8085	10249	47748
District Waters (excluding Sturgeon Lake)	walleye	102939	157537	300	260776	153358
	n. pike	7895	134043	469	142407	133903
	lake trout	16510	16152	352	33014	30079
	whitefish			11226	11226	63555
	sm. bass					10011
	y. perch					44374
	brook trout					983
	Total	127344	307732	12347	447423	441478
Total District Waters	walleye	102960	157680	576	261216	166198
	n. pike	7900	134300	544	142744	143934
	lake trout	17200	17200	570	34970	40110
	whitefish			18742	18742	73185
	sm. bass					10011
	y. perch					49590
	brook trout					983
	Total	128060	309180	20432	457672	484011

*Figures shown are the average harvest for the 3 years 1983-1985.

TABLE 3: PROJECTED HARVEST LEVELS BY USER GROUP

WATERBODIES	SPECIES	SPORT HARVEST (KG/YR)		COMMERCIAL* HARVEST (KG/YR)	TOTAL HARVEST (KG/YR)	ALLOWABLE YIELD (KG/YR)
		RES	NONRES			
Sturgeon Lake	walleye	21	179	454	654	12840
	n. pike	5	321	454	780	10031
	lake trout	690	1310	454	2454	10031
	whitefish			16330	16330	9630
	y. perch					5216
	Total	716	1810	17692	20218	47748
District Waters (excluding Sturgeon Lake)	walleye	102939	196921	635	300495	153358
	n. pike	7895	167554	984	176433	133903
	lake trout	16510	20190	265	36965	30079
	whitefish			25286	25286	63555
	sm. bass					10011
	y. perch					44374
	brook trout					983
	Total	127344	384665	27170	539179	441478
Total District Waters	walleye	102960	197100	1089	301149	166198
	n. pike	7900	167875	1438	177213	143934
	lake trout	17200	21500	719	39419	40110
	whitefish			41616	41616	73185
	sm. bass					10011
	y. perch					49590
	brook trout					983
	Total	128060	386475	44862	559397	484011

* Figures shown are the existing quotas established on the commercial fishery.

Beys, Mameigwess Lake, Peguchi Lake, Sowden Lake and Sturgeon Lake (Figure 12).

Lake Whitefish is the primary commercially harvested species. Other species taken include: northern pike, walleye, lake trout, yellow perch, ciscoes, burbot and suckers.

Quotas are established on each licence for lake whitefish, northern pike, walleye and lake trout. Lake whitefish is the primary target species and therefore the quotas set on the other species are designed to allow only for incidental catches. Total quotas established for the nine lakes by species in 1985 were: lake whitefish - 41,616 kg., northern pike - 1,438 kg., walleye - 1,089 kg. and lake trout - 719 kg. Individual species quotas are designed to stabilize harvest at the allowable biological yield. Dramatic fluctuations in quotas are not anticipated. However, annual quotas may change according to year class abundance.

The total harvest by species from the commercially fished lakes in 1985 was: lake whitefish - 13,055 kg., northern pike - 160 kg., walleye - 354 kg., lake trout - 585 kg. and all other species - 2,323 kg. The total harvest of all species was 16,477 kilograms for a total value of \$16,770. The total average harvest taken by commercial fishing over the past 3 years (1983-1985) was 20,432 kilograms.

iv) Tourist Operators

The Ministry of Tourism and Recreation indicate that in 1985 there were 42 licenced tourist establishments in the Ignace District catering to sport fishing. Of these, 29 are main base operations offering a mixture of housekeeping and/or american plan cottages, campsites and 12 outposts. Five are campgrounds only and the remaining 8 are fly-in lodges. In addition to these tourist establishments there are 12 out of district main base operations with 17 outposts and 5 air carriers with 20 outposts located in the district. Sturgeon Lake currently supports 11 of these licenced tourist establishments. A summary of the tourist facilities available in the Ignace District are 29 road accessible lodges (capacity unknown), 8 fly-in lodges (capacity unknown), 5 campgrounds (capacity unknown) and 49 outposts (capacity of 341 guests). In addition 56 outfitters have 716 boats coched on 180 of the district lakes.

The Ministry of Tourism and Recreation estimate the total annual gross revenue for the 42 licenced tourist establishments to be \$3,234,000. The total value of tourism to the area would be considerably higher since this figure does not include purchases made for other supplies and services.

The major fish species sought by guests of these tourist establishments are walleye, northern pike and lake trout. Either walleye or lake trout is generally the prime target species depending on the location of the tourist facility. Species composition of angled fish from Sturgeon Lake has shifted from primarily walleye in the mid-sixties to lake trout in 1985.

v) Non-Consumptive Users

Non-consumptive use in the Ignace District is limited to viewing spawning fish. A few locations along the main highway within a short distance of Ignace attract people who wish to view spawning walleye.

SUPPLY/DEMAND ANALYSIS AND TARGET REFINEMENT

Fisheries management targets, as described in the Ignace District Land Use Guidelines, outline overall program strategies. To provide a basis for refinement of these targets the following methodology was used:

(i) The potential yield by species for all district lakes was calculated;

(ii) The current use for sport and commercial fisheries was determined using the best available information;

(iii) The projected use for sport and commercial fisheries was determined using projected population estimates for the sport fisheries and current quotas for the commercial food fishery;

(iv) Angler-days for current and projected use were calculated using information from the 1980 Provincial Angler Survey, trends in licence sales and population projections. Target angler-days were calculated using a standard angler satisfaction level of 2.0 kg./angler-day.

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PRESENT COMMERCIAL FISHERIES

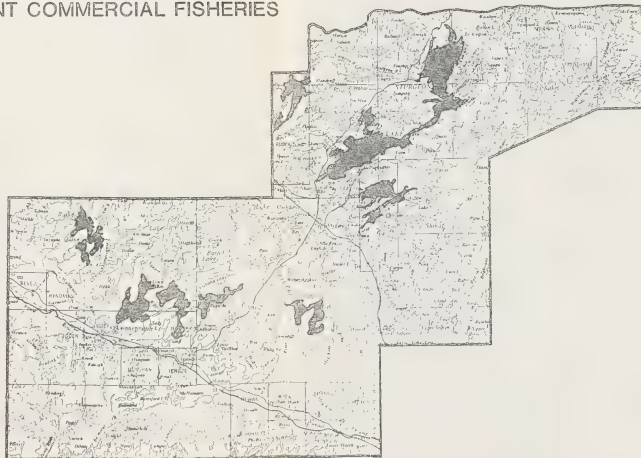


FIGURE 12

(v) The targets, projected use and angler-days from the Ignace District Land Use Guidelines were compared.

The results of this process are shown in Table 4. To understand the summary provided in this table it is necessary to define the allowable yield values used. The total Ignace District allowable yield for all fish species is 646,462 kilograms per year. With the exception of baitfish and commercial food fish, targets developed during the district land use planning process pertained only to the primary sportfish species (walleye, northern pike, lake trout and smallmouth bass). Therefore, only the allowable yield for these species (including brook trout) is considered in the target refinement process. The most significant comparisons to be made in this table are between allowable yields and projected uses. The significance of Sturgeon Lake is recognized, however targets specific to the lake were not developed during the district land use planning exercise.

The interim refined target is the DLUG target refined to reflect the current situation based on the most recent information available. These interim targets are presented as options only and to provide a basis for initial discussion. They may or may not be the target established in the fisheries management plan, since strategies and tactics decided on for a problem could influence the interim target and, actually result in establishing the final target. Some programs have been introduced recently that likely will influence the targets but have not yet been fully evaluated or implemented. For example, the district feels that the crownland recreation program, which was initiated in 1984, has had an influence in reducing the number of non-resident anglers and their subsequent sportfish harvest but, does not feel the reduction in harvest to be significant in terms of the overall district harvest. Further evaluation of the influence of this program in relation to the interim targets may be necessary. The interim refined targets were arrived at based on different criteria. The baitfish interim target is the expected demand to the year 2000, the commercial food fish interim target is the sum of the existing quotas and the sportfish interim target is the district allowable yield for each species. The angler-days interim target is the allowable yield for each species divided by an angler satisfaction level of 2 kg. per angler-day. As indicated previously, these interim targets

are presented as options only and to provide a basis for initial discussion. Some create additional problems over and above the initial problem of over harvest. For instance, the use of 2 kg. per angler-day as an acceptable angler satisfaction level will allow for an increase in angler participation but is a reduction in the current satisfaction level which is 2.5 kg. per angler-day. These will be addressed further under problems and issues.

The baitfish target established in the Ignace District Land Use Guidelines was based on past harvest levels and increased in proportion to the projected increase in angler-days. The projected use to the year 2000 of 108,600 dozen was established in a similar fashion. Problems and strategies for managing the baitfish fishery to the year 2000 will be discussed in relation to the projected use.

The DLUG target for the commercial food fishery of 65,000 kilograms was established using the level of existing quotas on lake whitefish, lake trout, walleye and northern pike or where quotas were not in place the average level of harvest for three years. All commercial fisheries now have species specific quotas for these species, which were developed as part of the provincial commercial fishery modernization program. The projected use of 44,862 kg. is the sum of the current quotas. Lake trout, walleye and northern pike represent 3,246 kilograms of this amount. The quotas established on these sportfish are designed to allow for the incidental catch of these species and are not considered to be a major contributor to the overall concern of the sportfish over harvest. Problems and management strategies will be discussed in relation to achievement of harvests to the quota level.

The DLUG target for lake trout was derived from partial estimates of the allowable yield for coldwater based on 0.25-0.75 kilograms per hectare. This resulted in the range target of 20-55,000 kilograms per year. The data now available has allowed for a more precise estimate of the allowable yield which has resulted in an interim refined target of 40,100 kilograms per year. The current and projected uses indicate that lake trout are presently not in an over harvest situation however they are extremely vulnerable to over exploitation. Discussion of the problems and strategies related to the management of lake trout will centre on this

TABLE 4: TARGET REFINEMENT FOR IGNAPE DISTRICT

INTERIM

FISHERY	CURRENT USE		PROJECTED USE		DLUG TARGET		ALLOWABLE YIELD		REFINED TARGET	
	KG	ANGLER DAYS	KG	ANGLER DAYS	KG	ANGLER DAYS	KG	ANGLER DAYS	KG	ANGLER DAYS
<u>Commercial Fishery</u>										
Baitfish (doz.)	92827	N/A	108600	N/A	105000	N/A	108600		108600	N/A
Food Fish (kg.)										
Whitefish	18742	N/A	41616	N/A	---	N/A	73185		41616	N/A
Lake Trout	570	N/A	719	N/A	---	N/A	719		719	N/A
Other Sport Fish	1120	N/A	2527	N/A	---	N/A	2527		2527	N/A
Sub Total	20432	N/A	44862	N/A	65000	N/A	44862		44862	N/A
<u>Sport Fishery</u>										
Lake Trout										
Residents	17200	---	17200	---	---	---	---		---	---
Non-Residents	17200	---	21500	---	---	---	---		---	---
Sub Total	34400	---	38700	---	20-55000	---	40110		40100	20050
Other Sport Fish										
Residents	110860	---	110860	---	---	---	---		---	---
Non-Residents	291980	---	364975	---	---	---	---		---	---
Sub Total	402840	---	475835	---	---	---	321126		321100	160550
<u>All Sport Fishery</u>										
Residents	128060	59000	128060	59000	---	---	---		---	---
Non-Resident	309180	111000	386475	139000	---	---	---		---	---
Total	437240	170000	514535	198000	319000	159500	361236		361200	180600
<u>Total by Species</u>										
Walleye	261216	---	301149	---	---	---	165198		166200	83100
Northern Pike	142744	---	177213	---	---	---	143934		143900	71950
Lake Trout	34970	---	59419	---	20-55000	---	49110		49100	20050
Sm. Bass	---	---	---	---	---	---	10011		10000	5000
Brook Trout	---	---	---	---	---	---	983		1000	500
Total All Species	438930	170000	517781	198000	319000	159500	361236		361200	180600

* Derived by taking an angler satisfaction level of 2.0 kg. per day and dividing this into the allowable yield.

vulnerability in relation to the allowable yield and the current and projected uses of other sport fish.

Current and projected uses indicate that over harvesting of other sport fish is occurring. The major concern is the current and projected uses of walleye. The interim target, as previously indicated, has been refined based on the allowable yield and an angler satisfaction level of 2 kg. per angler-day. To ensure the long term viability of the sport fishery discussion will focus on the alignment of the harvest with the allowable yield. Participation in the fishery will be affected by the methods of bringing the harvests in line with the allowable yield. It will be affected by either reducing harvest and allowing opportunities to increase to a level up to the projected use (harvest controls) or by limiting participation to reduce the harvest to the allowable yield (user controls).

The Ignace District Land Use Guidelines suggest the use of 2.0 kilograms per angler-day as an appropriate quality standard. Using this quality standard, the allowable yield for the district of 361,236 kg./yr. of the sportfish species mentioned would permit an increase in angler-days over the current use but could not support the projected use increase. It must also be indicated that the current estimate for the district is 2.5 kilograms per angler-day. The quality standard is an issue that will be dealt with in the overall management framework.

PROBLEMS AND ISSUES

An overview of the basic problems and issues related to the achievement of specific targets is needed so that effective strategies for dealing with the problem or issue can be developed. These strategies will form the basis of future management.

The problems of immediate concern within the planning framework in the Ignace District can be grouped into four broad categories:

i) Loss of fish and fishing opportunities: harvesting above the biological capability or allowable fish yield of a waterbody over the long term (over exploitation) results in a degraded fish community. The benefits, such as quality fishing and fishing opportunities, obtained from a degraded fish community are subsequently

lower than the benefits derived from a healthy, stable fish community.

ii) Loss of environmental quality: alteration or deterioration of aquatic habitats can impact on fisheries in a number of ways. Overall production capability can be reduced and/or community imbalances can occur. Both can result in a reduction of sport, commercial or baitfish species.

iii) Conflicts among users of the fisheries resource: conflicts occur generally as a result of competition for the availability of a fishery resource.

iv) Loss of aesthetics: the loss of aesthetics is of concern but is difficult to define as it is a matter of personal preference, to some extent. However, such things as a natural setting and remoteness are recognized as being important elements of a quality angling experience.

The current and projected demand by all user groups for sportfish exceeds the ability of the district waters to produce sportfish on a sustained yield basis. This over harvest situation may exist on a district basis but not for all sportfish species in all lakes. The greatest concern is the over harvest of the walleye resource which exceeds the allowable yield for this species by 50 percent. Also of concern is the projected harvest of lake trout which will be near or exceeding the allowable yield for this species. Illegal harvests of sportfish accentuate the entire over harvest problem.

There are other problems or issues which indirectly affect how fisheries resources are managed. Fisheries habitat can potentially be affected by timber harvesting operations and conflicts will be resolved through the Timber Management Planning Process. Strategies selected in fisheries management will be required input into timber management plans. Others tend to be less obvious but will also be addressed over the planning period. Some examples are, deficiencies in fisheries science and technology, communications among resource agencies and public awareness.

Commercial Food Fish Target

Problems related to the achievement of the commercial food fish target are summarized in Table 5. The commercial fishery in the Ignace

TABLE 5: PROBLEMS RELATED TO THE ACHIEVEMENT OF THE COMMERCIAL FISH AND BAITFISH TARGETS

TARGET	PROBLEM/ISSUE DESCRIPTION
COMMERCIAL FOOD FISH DLUG TARGET - 65,000 KG INTERIM TARGET - 44,862 KG (41,616 KG WHITEFISH, 3,246 KG SPORTFISH)	<ul style="list-style-type: none"> - SEVERAL USER GROUPS CURRENTLY COMPETE FOR LIMITED SPORTFISH (WALLEYE, NORTHERN PIKE, LAKE TROUT) RESOURCES. PROJECTED INCREASES IN DEMAND MAY INTENSIFY USER CONFLICT WITH COMMERCIAL FISHERMEN. - THE PROJECTED INCREASE IN USE FOR WHITEFISH MAY RESULT IN AN OVER HARVEST OF THIS SPECIES ON TWO SPECIFIC LAKES WHERE QUOTAS EXCEED THE CALCULATED ALLOWABLE YIELD.
COMMERCIAL BAITFISH DLUG TARGET - 105,000 DOZEN INTERIM TARGET - 108,600 DOZEN	<ul style="list-style-type: none"> - ANNUAL BAITFISH HARVESTS NEED TO BE ACCURATELY QUANTIFIED THROUGH MONITORING. IT IS CURRENTLY DIFFICULT TO DETERMINE ACTUAL NUMBERS OF BAITFISH TAKEN. - THE DEMAND FOR BAITFISH LICENCES EXCEEDS THE AVAILABILITY OF BAITFISH BLOCKS. - BAITFISHERMEN ARE CONCERNED THAT THEIR PRODUCTION OF BAITFISH MAY BE COMPROMISED AS A RESULT OF HABITAT DETERIORATION OR ALTERATION. THIS IS DUE IN PART TO A LACK OF KNOWLEDGE ON THE RELATIONSHIP BETWEEN TIMBER HARVESTING OF TREED SHORELINES AND THE STATUS OF BAITFISH. IT MAY ALSO BE DUE TO ALTERATION OF BAITFISH HABITAT BY THE INTRODUCTION OF WILD RICE. - THERE IS A QUESTION ON THE CAPABILITY OF THE BAITFISH INDUSTRY TO SATISFY SPECIFIC TOURIST OPERATOR REQUIREMENTS AND THE NEED TO PROVIDE AN APPROPRIATE FORUM FOR DISCUSSIONS BETWEEN THE TWO INDUSTRIES. - THERE IS A CONCERN OF THE BAITFISH INDUSTRY ON THE LOSS OF SUITABLE BAITFISH WATERS THROUGH INTRODUCTIONS OF UNDESIRABLE FISH SPECIES. THIS COULD RESULT IN A FAILURE OF THE BAITFISH INDUSTRY TO MEET ANGLER DEMANDS.

District is dependent on whitefish. In 1985 whitefish accounted for 79% (13,055 kg.) of the total commercial fish harvested and 85% (\$14,285) of the total value. At present there is little demand for this species by other user groups. Whitefish harvests by commercial fishermen fluctuate from year to year and are currently well below the quota levels. Given this current level of use and the anticipated demand by other user groups it is unlikely that there will be a problem with exceeding the target for this species. The quotas established for whitefish on the commercial fisheries are based on historical catch or on the allowable species yield for the lake. Two fisheries (Sturgeon Lake and Mameigwess Lake) have whitefish quotas based on historical catch. These quotas are approximately twice the allowable yield. They warrant monitoring since the harvest has not consistently been above the allowable yield. The quotas are subject to change based on trends in whitefish abundance. The remaining commercial fisheries have whitefish quotas based on the allowable yield. Recent refinements in the calculating of allowable yields has resulted in the whitefish quotas slightly exceeding the allowable yield. It is not considered to be a threat to long term fishing opportunities.

Northern pike, walleye and lake trout are taken incidentally during the harvesting of whitefish. These species accounted for a total of 7% (1,099 kg.) of the 1985 commercial fish harvest. Quotas for each of these species were established at 2% to 5% of the whitefish quota to allow for the incidental catch of these species.

Current commercial fish quotas for northern pike, walleye and lake trout amount to a total of 3,246 kg. (8% of the whitefish quota) for the Ignace District. These species are in demand by other user groups and there is some conflicts presently on the nine lakes where the commercial fishermen operate. The demand by the commercial fishermen, of sportfish, range from a low of 1.7% to a high of 6.1% of the allowable yield for sportfish, on these specific lakes. The demand for sportfish by commercial fishermen (less than 1% of the allowable yield) in relation to the demand by other user groups, for the district as a whole, is of minor concern. Conflicts may intensify since the current and projected harvests of these species is near or exceeding the allowable yields.

Commercial Baitfish Target

The current harvest of baitfish in the Ignace District appears to satisfy the demand. There have been a number of instances however, where tourist outfitters have indicated that the baitfish industry has been unable to meet their needs. Currently tourist operators who can provide documentation that they are unable to be supplied with bait can be issued a lake specific licence to take baitfish to supply their guests. This has generated mixed reaction within the baitfish industry and has resulted in some conflicts between the two industries. The harvest of bait from individual baitfish blocks is unregulated. There has been a general increase in the number of baitfish harvested over the past few years. Projected harvests are expected to continue to increase. In terms of the district waters ability to produce baitfish this increase is considered insignificant. However the effect this will have on the prime baitfish producing lakes is unknown. There is a need to continue to monitor baitfish harvests through the annual return as well as individual lake monitoring to assist in determining the capability of the district waters to produce baitfish.

There are few conflicts between users in the industry because of the block system. There is a demand for more licences but the district has chosen not to subdivide baitfish blocks. This position has been taken primarily because the harvest of baitfish appears to be meeting the demand.

Baitfishermen are concerned that their production of baitfish may be compromised as a result of habitat deterioration or alteration. This is due in part to timber harvesting and the relationship between treed shorelines and the status of baitfish. The introduction of wild rice may also alter the habitat and is of concern. The baitfish industry is also concerned about the loss of suitable baitfish waters through the introduction of undesirable species.

The problems related to the achievement of the baitfish target are summarized in Table 5.

Lake Trout Target

Lake trout fishing in the Ignace District prior to the early 1970's was conducted primarily on the larger road accessible lakes or lakes which supported an outpost camp or tourist resort. The majority of the fishing pressure was

by non-residents through the tourist resorts. Since the early 70's, increased road access and the advent of the snowmobile and all terrain vehicle has allowed for a wider distribution of lake trout angling pressure. These factors may also have contributed to the increase in the resident harvest which now accounts for approximately 50% of the lake trout harvest. Indications are that the majority of the lake trout lakes are currently used by anglers. Some lakes receive more pressure than others. Lake trout populations are extremely sensitive to exploitation due to their unique biological characteristics and the limnological characteristics of the lakes in which they exist.

The most significant problems related to the achievement of the lake trout target are those which may contribute to the over harvesting of this species (Table 6). Current and projected uses indicate that lake trout are not exceeding the allowable yield for the district as a whole. There is evidence however, that lake trout in some lakes are currently in an over harvest situation. Victoria Lake, Little Raleigh Lake and possibly Cecil Lake are implicated but the problem may be more extensive. Over harvesting may be taking place in the area south of highway 17, where the majority of the smaller lake trout lakes are located, or, as indicated by the data from Victoria Lake, in the road accessible area to the northwest of Ignace. Lack of current harvest data prohibits a complete assessment. Lake trout fishing is becoming more popular. There is concern that if fishing success decreases for other species that increased pressure may be placed on the lake trout resource.

Conflicts between users is centred primarily around the commercial fishermen. On the lake trout lakes where commercial fishermen exist there is a conflict between this user group and anglers. On Sturgeon Lake there is also a conflict between the tourist resort operators and the commercial fisherman. These conflicts are a result of the perceived competition for lake trout and other sportfish.

Habitat problems have been moderated by management practices which have recognized the sensitivity of this species and have prevented timber extraction activities on shorelines adjacent to coldwater lakes. However, localized habitat problems may still occur despite planning controls as a result of incomplete inventory data. The district estimates that 13%

(1600 ha.) of the unsurveyed lake area (located primarily in the Shikag Lake and Sturgeon River zones shown on Figure 5) may contain lake trout.

Sportfish Target

Sportfishing on district lakes involves the harvest of walleye, northern pike and smallmouth bass. Smallmouth bass are seldom specifically fished for in the majority of the lakes where they occur, but, are taken incidentally while fishing for other species. Non-residents comprise 65% of the angling pressure on district waters and account for 70% of the current harvest. Guests using the tourist services in the district, primarily non-residents, generated a gross revenue of approximately \$3.2 million in 1985.

Harvest levels relative to the allowable yield of certain species varies across the district. The current and projected harvest of walleye are significantly above the allowable yield for this species in the district as a whole. This will compromise the resource and the fishing opportunities derived from it. Fishing pressure on this species is the lightest in the northern area of the district, generally in the areas inaccessible by road. There is reason to believe that some lakes are currently in an over harvest situation. This situation could be compounded through the planned disposition of cottage lots on Barrel Lake, Indian Lake, Encamp Lake, Eady Lake, Wintering Lake and Robinson Lake. Five of these lakes are located in the two areas immediately to the northeast and northwest of Ignace. Lack of current harvest data prohibits a complete assessment. Sturgeon Lake which has 10% of the allowable yield for the district accounts for only 2% of the current harvest of sportfish. It may be desirable to encourage the use of this lake by anglers in order to alleviate the pressure on other lakes. Similarly, perch and smallmouth bass are underutilized in the district and available to users.

Critical lake habitats have been protected through past management practices and the district is not aware of significant problems at this time. Localized problems may still occur despite planning controls as a result of incomplete inventory data. Currently 6% of the lakes by number and 68% of the water area in the district has been surveyed.

Conflicts between users exist in some locations. This can be contributed partially to the anglers perception that access should be available to most waterbodies and the tourist industry's perception that access is detrimental to various aspects of the recreational opportunities they provide. These conflicts exist primarily in some of the more remote areas in the district. As projected harvests of the fishery resource increases these conflicts will intensify.

Changes to the natural setting of the angling experience have been minimized by past management practices. Changes in the aspect of remoteness have occurred as a result of increased road access. The natural setting and remoteness are two aspects of aesthetics which are highly valued by the tourist industry for their clientele.

A summarization of the problems discussed above is provided in Table 6.

TABLE 6: PROBLEMS RELATED TO THE ACHIEVEMENT OF THE LAKE TROUT AND SPORTFISH TARGETS

TARGET	PROBLEM/ISSUE DESCRIPTION
LAKE TROUT	
PLUG TARGET-20-55,000 KG.	- THERE IS EVIDENCE THAT LAKE TROUT IN SOME LAKES ARE CURRENTLY IN AN OVER HARVEST SITUATION. TWO LAKES (VICTORIA LAKE AND LITTLE RALEIGH LAKE) ARE IMPLICATED BUT THE PROBLEM MAY BE MORE EXTENSIVE LACK OF CURRENT HARVEST DATA PROHIBITS A COMPLETE ASSESSMENT.
INTERIM TARGET-40,100 KG.	
-20,050 ANGLER-DAYS	
	- THERE IS A CONFLICT ON STURGEON LAKE BETWEEN THE TOURIST RESORT OPERATORS AND THE COMMERCIAL FISHERMAN. THIS IS A RESULT OF THE PERCEIVED COMPETITION FOR LAKE TROUT AND OTHER SPORTFISH SPECIES BETWEEN USER GROUPS.
	- IN SOME LOCALIZED SITUATIONS ON LAKE TROUT LAKES WHERE COMMERCIAL FISHERMEN EXIST THERE IS A CONFLICT BETWEEN THIS USER GROUP AND ANGLERS. THIS IS A RESULT OF THE PERCEIVED COMPETITION FOR LAKE TROUT RESOURCES BETWEEN USER GROUPS. SEVEN OF THE NINE COMMERCIAL FISHING LICENCES ARE FOR LAKES CONTAINING LAKE TROUT.
	- LOCALIZED HABITAT PROBLEMS MAY STILL OCCUR DESPITE PLANNING CONTROLS, AS A RESULT OF INCOMPLETE INVENTORY DATA. IT IS ESTIMATED THAT 13% (1600 HA.) OF THE UNSURVEYED LAKE AREA MAY CONTAIN LAKE TROUT.
	- THE CURRENT AND PROJECTED USE FOR LAKE TROUT INDICATE THE DEMAND IS NOT AS GREAT AS THE ALLOWABLE YIELD. CURRENT AND PROJECTED HARVEST OF OTHER SPORTFISH EXCEED THE ALLOWABLE YIELD. IF FISHING SUCCESS FOR OTHER SPECIES DECREASES, INCREASED PRESSURE MAY BE PLACED ON THE LAKE TROUT RESOURCE.

TABLE 6: PROBLEMS RELATED TO THE ACHIEVEMENT OF THE LAKE TROUT AND SPORTFISH TARGETS

TARGET	PROBLEM/ISSUE DESCRIPTION
OTHER SPORTFISH	
DLUG TARGET - 319,000 KG.	- THE CURRENT AND PROJECTED HARVESTS OF WALLEYE, NORTHERN PIKE AND LAKE TROUT EXCEED THE ALLOWABLE YIELD FOR ALL SPORTFISH SPECIES (WALLEYE, NORTHERN PIKE, LAKE TROUT, SMALLMOUTH BASS, AND BROOK TROUT) FOR THE DISTRICT OVERALL. THE MAJOR CONTRIBUTOR TO THE PROBLEM IS THE OVER HARVEST OF WALLEYE. THE SENSITIVITY OF LAKE TROUT TO OVER EXPLOITATION MUST BE CONSIDERED. THE HARVEST MUST BE BROUGHT IN LINE WITH THE ALLOWABLE YIELD.
INTERIM TARGET - 361,200 KG.	
- 180,600 ANGLER-DAYS	- THE CURRENT HARVEST OF 261,216 KG AND PROJECTED HARVEST OF 301,149 KG. OF WALLEYE EXCEED THE ALLOWABLE YIELD FOR THIS SPECIES (166,198 KG.) IN THE DISTRICT AS A WHOLE. THIS WILL COMPROMISE THIS RESOURCE AND THE FISHING OPPORTUNITIES DERIVED FROM IT.
	- ON THE LAKES WHERE COMMERCIAL FISHING TAKES PLACE THERE IS A PERCEIVED CONFLICT BETWEEN THIS USER GROUP, ANGLERS, AND THE TOURIST INDUSTRY. THIS IS A RESULT OF COMPETITION FOR LIMITED FISHERY RESOURCES.
	- CONFLICTS BETWEEN THE TOURIST INDUSTRY AND ANGLERS EXIST IN SOME LOCATIONS. THIS IS DUE PARTIALLY TO THE ANGLERS PERCEPTION THAT ACCESS SHOULD BE AVAILABLE TO MOST WATERBODIES AND THE TOURIST INDUSTRY'S PERCEPTION THAT ACCESS IS DETRIMENTAL TO VARIOUS ASPECTS OF THE RECREATIONAL OPPORTUNITIES THEY PROVIDE. CONFLICTS RESULT FROM COMPETITION FOR LIMITED FISHERY RESOURCES.
	- REMOTENESS IN THE ANGLING EXPERIENCE HAS CHANGED AS A RESULT OF INCREASED ROAD ACCESS. THE NATURAL SETTING AND REMOTENESS ARE TWO ASPECTS OF AESTHETICS WHICH ARE HIGHLY VALUED BY THE TOURIST INDUSTRY FOR THEIR CLIENTELE.

TABLE 6: PROBLEMS RELATED TO THE ACHIEVEMENT OF THE LAKE TROUT AND SPORTFISH TARGETS

TARGET	PROBLEM/ISSUE DESCRIPTION
OTHER SPORTFISH CONT.	<ul style="list-style-type: none"> - LOCALIZED HABITAT PROBLEMS MAY STILL OCCUR DESPITE PLANNING CONTROLS, AS A RESULT OF INCOMPLETE INVENTORY DATA. CURRENTLY 6% OF THE LAKES BY NUMBER AND 68% OF THE WATER AREA HAVE BEEN SURVEYED. - THERE IS EVIDENCE THAT SOME OF THE EASILY ACCESSIBLE LAKES ARE CURRENTLY IN AN OVER HARVEST SITUATION. THIS PROBLEM COULD BE MORE EXTENSIVE. LACK OF CURRENT HARVEST DATA PROHIBITS A COMPLETE ASSESSMENT. THIS SITUATION COULD BE COMPOUNDED THROUGH THE PLANNED DISPOSITION OF CROWN LAND FOR COITAGE LOTS. - SMALL MOUTH BASS AND PERCH ARE UNDERUTILIZED IN THE MAJORITY OF THE LAKES WHERE THEY OCCUR. PERCH PROVIDES AN ALLOWABLE YIELD OF 50,000 KG. AND COULD PROVIDE AN ADDITIONAL 25,000 ANGLER-DAYS IF THE FULL POTENTIAL WAS REALIZED. - CURRENT AND PROJECTED USE IN RELATION TO THE ALLOWABLE YIELD OF SPORTFISH WOULD INDICATE THAT STURGEON LAKE IS NOT BEING UTILIZED TO IT'S POTENTIAL. CONTROLS PRESENTLY EXIST LIMITING NON-RESIDENT USE AND CURTAILING FURTHER DEVELOPMENT.

OPTIONAL MANAGEMENT STRATEGIES AND TACTICS

INTRODUCTION

This section will present optional management strategies and tactics which could provide a solution, or partial solution, to a problem related to the achievement of a specific target. Only those strategies that are realistic and provide for a complete, or partial solution, to a problem were considered. The do nothing approach was not considered as a viable approach by the district as intensive resource use requires intensified management efforts. No preferred course of action has been presented at this time. They will be given in the management plan itself. The public is invited to provide comments on all aspects of this document but, are particularly encouraged to provide input on this section, since this will provide the basis for the direction of future fisheries management in the Ignace District.

The relationship between the Ignace District Land Use Guideline objectives and the fisheries management plan targets, problems, strategies and tactics are presented in Figure 13.

STRATEGIES AND TACTICS

The following is a discussion of the optional strategies and tactics presented in Tables 7 and 8. As indicated previously, the strategies presented could provide partial or complete solution to a problem. It may not be necessary to carry out all strategies associated with a problem to achieve a solution. Nor is it necessarily essential that all tactics need to be carried out to achieve specific strategy implementation. In some cases, individual tactics, or a combination of tactics, will be sufficient to achieve the desired result. It should be noted, that the selection of a specific tactic often implies the use of additional tactics, not specifically stated, to ensure implementation. For example, the selection of a tactic to reduce walleye creel limits would require legislative changes and could require increased enforcement effort to ensure compliance.

Discussion of the strategies and tactics in relation to each problem is also shown in Tables 7 and 8. This discussion provides a summary of implications related to strategies and tactics which will assist in determining the most appropriate management approach. As previously indicated, no preferred course of action has been presented at this time and the public is encouraged to provide input.

Commercial Food Fish

Two problems have been identified in achieving the commercial fish target (Table 7). The most pressing problem is the competition with other users for a limited sportfish resource on lakes that are commercially fished. The projected use of walleye, northern pike and lake trout, for the district, indicate a harvest at, or above, the allowable yield. The only appropriate approach is to lower the harvest to the allowable yield. The question is, which user group or groups should reduce their catch. This question requires a look at commercial fish operations in the district in relation to current use, projected use, social implications and the economic return to the Province. Current harvest of commercially taken sportfish accounts for less than 0.5% of the overall district harvest. The projected use of commercially taken sportfish would account for less than 1% of the allowable yield for sportfish. The value of the commercial fishery, in relation to other aspects of the fishery resource, such as coarse fish removal, is unknown. The current harvest of all commercial fish results in an economic return of approximately \$17,000. The commercial fishery has had a long history in the district, but, the economic significance in relation to the recreational fishery is much lower. An option is to reduce the harvest of sportfish by other users and maintain the commercial fishery at its current level. Reducing the harvest of sportfish by the commercial fishery and making up the deficit with other species is an option. However, the viability of the commercial fishery may be in question since their financial return may be reduced.

There are only two possible solutions to the problem of the potential over harvest of whitefish. Either to maintain the existing quotas or to reduce the quotas to the allowable yield. Whitefish populations do not appear to be in any danger of collapse. Reduction in the whitefish quotas could result in an economic loss.

Commercial Baitfish

There does not appear to be a problem with the attainment of the DLUG target (105,000 dozen) at this time and revision of the target upward is possible. Also, there does not appear to be a need to regulate harvests. However, should harvests indicate a downward trend in the


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graph TD
    A["*****DISTRICT LAND USE GUIDELINES*****"] --> B["BROAD MANAGEMENT OBJECTIVE"]
    B -.-> C["SPECIFIC MANAGEMENT OBJECTIVES"]
    C --- D["SPORTFISH OBJECTIVE"]
    C --- E["COMMERCIAL FISH OBJECTIVE"]
    C --- F["LAKE TROUT OBJECTIVE"]
    E --- G["FOOD OBJECTIVE"]
    E --- H["BAIT OBJECTIVE"]
    C -.-> I["*****FISHERIES MANAGEMENT PLAN*****"]
    I --- J["TARGET"]
    I --- K["TARGET"]
    I --- L["TARGET"]
    I --- M["TARGET"]
    J --- N["PROBLEMS"]
    K --- O["PROBLEMS"]
    L --- P["PROBLEMS"]
    M --- Q["PROBLEMS"]
    N --- R["STRATEGIES"]
    O --- S["STRATEGIES"]
    P --- T["STRATEGIES"]
    Q --- U["STRATEGIES"]
    R --- V["TACTICS"]
    S --- W["TACTICS"]
    T --- X["TACTICS"]
    U --- Y["TACTICS"]

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To protect, rehabilitate, enhance and maintain the district's fish communities and their environment to provide an optimum contribution of fish, fishing opportunities and associated benefits to society.

TABLE 7: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO ACHIEVEMENT OF COMMERCIAL FISH AND BAITFISH TARGETS

A. COMMERCIAL FOOD FISH - DLUG TARGET- 65,000 KG.

-INTERIM TARGET - 44,862 KG. (41,616 KG. WHITEFISH; 3,246 KG. SPORTFISH)

COMMERCIAL FOOD FISH: PROBLEM: 1. Several user groups currently compete for limited sportfish (walleye, northern pike, lake trout) resources. Projected increases in demand may intensify user conflict with commercial fishermen. Current commercial fish quotas for these species amount to a total of 3,246 kg. for the district.

Identification	Optional Tactics	Discussion
Optional Strategies	Optional Tactics	Tactics
i) Maintain current quotas and reduce the DLUG target to coincide with those quotas. (Tactics a,b,d)	a) On commercial fished lakes implement controls on anglers to reduce the harvest of walleye, northern pike and lake trout from these waters.	All of the tactics are aimed at reducing the harvest of walleye, northern pike and lake trout. Tactics c) and d) would impose conditions on the commercial fisheries which may make it difficult for fishermen to harvest the principle target species of whitefish and could jeopardize the economic viability of the industry in the district. Tactic d) could be expensive to the individual commercial fishermen and therefore could again jeopardize the economic viability of the industry. Tactic e) would result in an expense to the taxpayer and in further underutilization of fish species not presently taken by anglers. It would make a minor contribution to the solution and could result in a greater economic loss than apply for other tactics. Both tactics a) and b) place controls on anglers. However, tactic b) would do so in the broader scope of the entire district rather than on an individual lake basis.
ii) Reduce the harvest of walleye, northern pike and lake trout by the commercial fishery and make up the harvest reduction with other species. (Tactics a,c)	b) Implement controls on anglers to reduce the harvest of walleye, northern pike and lake trout to the level of the allowable yield for the district. c) Lower or establish nil quotas for walleye, northern pike and lake trout for the commercial fisheries.	Reducing the harvest of walleye and northern pike to the level of the allowable yield is necessary. All options would be a step in this direction, however options ii) and iii) both could result in elimination of the commercial fisheries. The quotas established are small and do not contribute significantly to the overall district problem of the over harvest of sportfish.
iii) Reduce the harvest of walleye by all user groups to the level of the allowable yield for the district. (Tactics a through e)	d) Eliminate gillnets and implement the use of live entrapment gear only. Encourage the harvest of other fish species such as suckers, burbot and discus realizing such may require financial assistance. e) Eliminate commercial fisheries through governmental buyouts.	

TABLE 7: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO ACHIEVEMENT OF COMMERCIAL FISH AND BAITFISH TARGETS

COMMERCIAL FOOD FISH: PROBLEM: 2. The projected increase in use for whitefish may result in an over harvest of this species on two specific lakes where quotas exceed the calculated allowable yield. This presently exists on Sturgeon Lake and Mameigwess Lake where commercial fisheries have been in existence for a number of years. The long term harvest trends indicate that the lakes can support the quotas as they presently exist.

Identification	Discussion		
Optional Strategies	Optional Tactics	Strategies	Tactics
i) Maintain current whitefish quotas on the two lakes. (Tactic a)	a) Maintain current quotas and continue the present commercial fish monitoring program in the district to ensure that whitefish populations in the lakes remain stable. Adjust quotas annually if signs of stress are indicated.	There are really only two options to be considered, either to maintain the quotas at their current level or to lower the quotas to the level of the allowable yield. Long term harvest data from the fisheries support strategy i) and indicate that the whitefish populations are not in danger of collapse. Strategy ii) would ensure the stability of the whitefish populations but would result in an economic loss to the fishermen and possibly the local economy.	Tactic b) would ensure that the whitefish population in each of the lakes is not over harvested but would result in loss of income to the fishermen concerned. Tactic a) is less positive but should result in the same outcome provided monitoring is continued and quotas adjusted quickly if signs of stress in the population are indicated.
ii) Reduce current whitefish quotas on the lakes to the allowable yield. (Tactic b)	b) Reduce quotas for whitefish to the level of the allowable yield for each lake to ensure that whitefish are not over harvested.	Strategy iii) would ensure the stability of the whitefish populations and would provide a means for the commercial fishermen to obtain some whitefish to offset the reduction in the current quota.	Tactic c) would allow commercial fishermen to regain some of the reduction in current whitefish quotas but could result in an increase in sportfish harvests through the fishing of additional lakes.
iii) Reduce the current whitefish quotas on the lakes and provide an alternative source of whitefish. (Tactic b,c)	c) Provide whitefish quotas on lakes capable of supporting commercial whitefish fisheries to offset reductions in current quotas.		

TABLE 7: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO ACHIEVEMENT OF COMMERCIAL FISH AND BAITFISH TARGETS

B. COMMERCIAL BAITFISH - DLUG TARGET - 105,000 DOZEN
- INTERIM TARGET-108,600 DOZEN

COMMERCIAL BAITFISH: PROBLEM: 1. Annual baitfish harvests need to be accurately quantified through monitoring. It is currently difficult to determine actual numbers of baitfish taken. The current harvest of baitfish is approximately 92,827 dozen. This estimate is derived from annual returns submitted by the baitfishermen. Many of these fishermen deal in gallons of bait rather than dozens and sell from one dealer to another.

Identification	Optional Tactics	Strategies	Discussion	Tactics
<p>i) Increase baitfishermen awareness of the significance of annual returns as a monitoring tool. (Tactic a,b)</p> <p>ii) Improve communications with the baitfish industry. (Tactic b,c,d,e)</p> <p>iii) Monitoring of baitfish harvests in the field. (Tactics d,e)</p>	<p>a) Increase enforcement effort regarding submission of annual returns.</p> <p>b) Hold annual meeting with the baitfishermen to allow all parties to benefit from sharing in discussions on mutual problems, concerns and requirements.</p> <p>c) Increase the knowledge and involvement of the managers of the baitfish industry by attendance at association meetings and inspection of operations.</p> <p>d) Conduct monitoring of baitfish harvests from specific lakes to obtain more accurate information on the productivity of baitfish waters.</p> <p>e) Solicit co-operation of baitfishermen in providing harvest information from specific lakes.</p>	<p>All options are beneficial to the manager in obtaining better data on current harvests of baitfish which will assist in the prediction of allowable yields. The most beneficial may be ii) since there still exists a reluctance by some baitfishermen to provide information which they classify as being an asset to their business. Strategy iii) would be beneficial but would be difficult to implement and the results may be difficult to measure, since it has been attempted in other areas with little success.</p>	<p>All tactics would assist in quantifying of baitfish harvests. Tactic a) can be done with existing MNR staff. It is probably the least desirable since co-operation through coercion seldom will result in high quality compliance. However, some degree of enforcement will always be necessary. Tactics b) and c) can be implemented with little difficulty or expense and may be the most appropriate since the majority of the baitfishermen have accumulated a vast amount of knowledge over the years. Obtaining harvest information from specific lakes would benefit everyone since there is generally a lack of knowledge with regard to the productivity of baitfish. The co-operative collection of data is probably the preferred method since this would incorporate improved communications.</p>	

TABLE 7: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO ACHIEVEMENT OF COMMERCIAL FISH AND BAITFISH TARGETS

COMMERCIAL BAITFISH: PROBLEM: 2. The demand for baitfish licences exceeds the availability of baitfish blocks. There are 44 blocks in the Ignace District of which 43 are licenced. The one unlicensed block is inaccessible and has proven to be void of good baitfish waters. There is currently a waiting list maintained in the district of individuals interested in obtaining a block should any suitable areas be available.

Identification		Discussion	
Optional Strategies	Optional Tactics	Strategies	Tactics
I) Maintain the current system of blocks and licences. (Tactic a,b)	a) Establish a policy to freeze the number of licences issued to that presently in existence. Continue to licence by full block only. b) Continue present practice of licencing to existing baitfishermen, allowing new licences only when an existing baitfisherman gives up one or more blocks.	The demand for licences exceeds the availability of baitfish blocks. To limit the number of licences to that in existence now would not lessen the demand. The expansion of licence numbers to meet the demand could compromise the resource by increasing harvest pressure.	Limiting the number of licences to those presently in existence would not lessen the demand and could create a situation of having unutilized areas if current fishermen give up a portion of their existing area. Tactic b) allows for new licences under these circumstances but does not accommodate the present demand for licences. Tactic c) and d) may accommodate the demand but may place the resource in a stressful situation. These could also hamper the ability of fishermen to effectively manage an area and could result in an economic loss to the fishermen.
II) Accommodate the demand for additional licences. (Tactic c,d)	c) Establish a policy to allow for the subdivision of baitfish blocks. Identify blocks which could be subdivided and obtain input from baitfishermen as to the extent that subdivision could occur. d) Limit the number of blocks on existing licences.		

TABLE 7: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO ACHIEVEMENT OF COMMERCIAL FISH AND BAITFISH TARGETS

COMMERCIAL BAITFISH: PROBLEM: 3. Baitfishermen are concerned that their production of baitfish may be compromised as a result of habitat deterioration or alteration. This is due in part to a lack of knowledge on the relationship between timber harvesting of treed shorelines and the status of baitfish. It may also be due to alteration of baitfish habitat by the introduction of wild rice.

Identification	Optional Strategies	Optional Tactics	Strategies	Tactics
	<p>i) Continue to provide protection to known baitfish lakes through the areas of concern concept within the timber management planning process. (Tactics a,b,c)</p>	<p>a) Continue to provide input to timber management planning regarding baitfish.</p> <p>b) Improve communications with the baitfish industry to update current knowledge on the distribution of lakes known to be harvested for baitfish.</p> <p>c) Encourage baitfishermen to advise the MNR if new baitfish lakes are identified and the MNR to contact local baitfisherman prior to the authorization of wild rice introductions.</p>	<p>Of primary concern is the effect of timber harvesting in relation to the production of baitfish. Strategy i) is designed to inhibit disturbance of present baitfish waters to ensure viability of lakes remain at present levels. Little is known about the effect of shoreline disturbance on baitfish abundance. Strategy ii) would assist in evaluating this but, would require the co-operation of baitfishermen and timber harvesters.</p>	<p>Disturbance on shorelines can be controlled through input to the timber management planning process. Improved communications with the baitfishermen, tactic b), would provide for more effective input. Tactic a), and c) will allow for the protection of the currently productive lakes. By conducting experimental management projects as suggested by tactic d), it may be possible to enhance baitfish populations.</p>
	<p>ii) Identify the relationship between baitfish abundance and timber harvesting activities in the vicinity of baitfish lakes. (Tactic d)</p>	<p>d) Conduct experimental management projects with baitfishermen. Compare various cutting techniques to the abundance of baitfish.</p>		

TABLE 7: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO ACHIEVEMENT OF COMMERCIAL FISH AND BAITFISH TARGETS

COMMERCIAL BAITFISH: PROBLEM: 4. There is a question on the capability of the baitfish industry to satisfy specific tourist operator requirements and the need to provide an appropriate forum for discussions between the two industries.

Identification		Discussion	
Optional Strategies	Optional Tactics	Strategies	Tactics
<p>i) Maintain current practice of licencing a specific lake to a tourist operator to allow for taking of bait to supply his own guests. (Tactic a)</p> <p>ii) Improve communications between the baitfish industry and the tourist industry to try and resolve the problem. (Tactics b,c)</p>	<p>a) Maintain the existing policy of licencing a specific lake to a tourist operator only when documentation can be provided that a baitfish harvester cannot meet the operator's needs.</p> <p>b) Provide the means by which both industries and MNR can enter into meaningful discussions to resolve problems.</p> <p>c) Encourage both industries to attend respective association meetings.</p>	<p>The current practice of licencing tourist operators provides a means by which they can supply their guests if the baitfishermen cannot meet their needs. It is difficult to ascertain when this condition exists. Strategy ii) would allow both parties to enter into discussions about the problem and suggest a mutually acceptable solution.</p>	<p>Tactic a) apparently is not an acceptable solution since it appears there are tourist operators unable to be supplied with bait and who do not have a specific lake licence. Tactic b) and c) appear to be better alternatives, however, a firm commitment from both industries to participate in discussions would be required.</p>

TABLE 7: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO ACHIEVEMENT OF COMMERCIAL FISH AND BAITFISH TARGETS

COMMERCIAL BAITFISH: PROBLEM: 5. There is a concern of the baitfish industry on the loss of suitable baitfish waters through introductions of undesirable fish species. This could result in a failure of the baitfish industry to meet angler demands.

Identification		Discussion	
Optional Strategies	Optional Tactics	Strategies	Tactics
<p>i) Increase enforcement of regulations pertaining to the introduction of fish to lakes and the taking of baitfish. (Tactics a,b,c)</p> <p>ii) Improve communications with the baitfish industry to assist in the identification of important baitfish lakes. (Tactics b,c)</p>	<p>a) Increase enforcement effort of pertinent regulations by increasing number of checks of baitfish waters.</p> <p>b) Increase enforcement effort in areas where baitfishermen indicate a problem exists.</p> <p>c) At annual meetings with the baitfishermen obtain information on important baitfish lakes to allow for protection of these waters from introductions of other fish species.</p>	<p>Prevention of the loss of productive baitfish waters is the best management approach. If baitfish waters are lost, it could result in a shortage of baitfish and an economic loss to the local economy. Increased enforcement may help to decrease the problem but will not prevent it entirely. Improving communications with the industry to identify lakes requiring protection would provide the greatest benefit to the industry.</p>	<p>All of the tactics will assist in maintaining productive baitfish lakes. The effectiveness of tactics a) and b) will be difficult to ascertain but tactic b) should be more effective than tactic a). Tactic c) may reduce the number of introductions to baitfish waters. Environmental Assessment procedures, now in place, will reduce the number of MNR controlled introductions (ie. brook trout) to baitfish waters.</p>

abundance of baitfish, some manipulation of the target and harvest may be necessary to ensure the stability of the industry.

There is a constant demand for new baitfish licences as well as area specific licences for tourist operators. Consideration should be given to options to satisfy this demand or to limit licences (Table 7). The industry should attempt to address whether or not more licenced individuals should be involved in the industry in view of the projected increase in demand. Things to consider would include profit at existing licencing levels, as it relates to the support of additional fishermen, as well as the ability of the industry to satisfy the specific needs of the tourist operators.

The solution to baitfish habitat concerns can probably best be addressed through the continued protection of baitfish waters through input to the timber management planning process. This would provide some time to investigate the relationship between timber harvesting activities on shorelines.

The loss of suitable baitfish waters through species introductions can happen when individuals taking bait for their own use inadvertently deposit species in a lake that they are not normally found in or when MNR authorizes the stocking of a waterbody. The solution to this problem is probably through increased enforcement while at the same time improving communications with the industry in the identification of important baitfish lakes. Existing environmental assessment procedures will minimize this problem.

Lake Trout

Road accessible lake trout lakes generally, receive more intensive angling pressure than those inaccessible by road. This has very little bearing on the abundance of the species in a lake since it is the relationship between angling pressure and the allowable yield which will dictate the status of the population. It is the district's opinion that there are more effective means of controlling angling pressure and harvests than through the control of road access. The current and projected use of lake trout in the district, as a whole, does not indicate a demand that will exceed the allowable yield. The harvests should be monitored, and if they exceed the allowable yield, controls may have to be

implemented. Of immediate concern is the over harvest of lake trout in some specific lakes. The problem may be more extensive than indicated since a lack of harvest data prohibits a complete assessment. Controls on all users which will reduce the harvest to the allowable yield on these lakes may not be acceptable to resident anglers (Table 8). However, this may be the only solution on some lakes where the majority of the pressure is generated by residents during the winter months.

Conflicts between commercial fishermen and other users is generally a result of a perceived competition for the fishery resource, since lake trout on the commercial fished lakes do not appear to be over harvested.

Localized habitat problems resulting from timber harvesting may still occur, despite planning controls, due to incomplete inventory data. The only reasonable solution is to continue to update the data base, in order to provide protection through the timber management planning process.

Sportfish

Of the problems related to the achievement of the sportfish target, the over harvesting of specific species is of the primary concern to resource managers (Table 8). This applies to the district as a whole, as well as to specific lakes where the situation could be compounded through the planned disposition of crown land for cottage lots. The best solution is to reduce the harvest of walleye. Decisions related to the harvest reduction will have to consider the relative contribution of each user group to the over harvest and the economic return to Ontario. In terms of economics, it is recognized that substantial benefits accrue to local communities and the province through the non-resident use of tourist facilities. The increased use of underutilized species such as smallmouth bass and perch would lessen the problem but not eliminate it. However, this could increase or maintain the opportunities available to the anglers.

The use of Sturgeon Lake indicates that it is not being utilized to its potential. Eleven tourist resorts exist on the lake and the pressure they exert on the fishery is considered minimal. They may have the potential to increase pressure by reducing the number of days their guests fish

other waterbodies. The harvest data for the lake is based on information collected in the late 1970's and it may be necessary to update harvest information. Controls presently exist which limit non-resident use. By eliminating these controls, some pressure from presently over harvested lakes may be diverted to Sturgeon Lake. This would not eliminate the entire over harvest situation in the district.

The nature of user conflicts varies within the district. All conflicts have as their basis user competition for a limited fishery resource. Conflicts arise, with other user groups, wherever commercial fishermen operate. Resolution of this problem will have to centre on improved communications between user groups, as well as, considering the overall contribution of each group to the problem. The conflicts between the tourist industry and anglers generally result as a competition for the resource but aesthetics is also of concern to outfitters. A possible solution is the designation of lakes primarily for the use of tourism. The viability of this strategy would have to be assessed in terms of the number of lakes involved as well as how acceptable it is to resident anglers. Presently, the timber management planning process recognizes tourism lakes and, where possible, limits road access. It partially resolves the concern of the tourist industry in regards to competition and aesthetics but this is a contentious issue with many residents who feel the need to open access to more lakes.

In order to ensure that the allowable yields of the various fisheries are achievable and sustained over the long term, it is necessary to maintain habitat. This will require the continued update of the information base in order to provide protection through the timber management planning process.

MANAGEMENT ZONES

The distribution pattern of users and the resource across the district varies. Because of this, the use of a series of zones to assess and manage the fisheries resource is proposed (Figure 5). The zones have not been meshed along the district boundary with zones that other districts may be proposing. Names have been placed on the zones for ease of reference only. These zones appear to offer a reasonable separation of areas having similar characteristics. An attempt has been made to

establish boundaries which can be identified easily. The zones would not be established in legislation at this time. Their primary use would be to provide the logical basis for the systematic collection of information related to species harvests, angler origin and angling pressure. This information will be used to assess the influence of the Crownland Recreation Program on the sportfish fisheries and will provide the basis for more precise management. Further quantification of such characteristics as harvest intensity could permit certain management tactics to be selectively applied and tested. Increasing the effectiveness of certain tactics will assist in achieving the stated management objectives and targets. The zones are proposed only and public input on the potential use of zones and the proposed boundaries is invited.

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

A. LAKE TROUT - DLUG TARGET - 20-55,000 KG.

-INTERIM TARGET - 40,100 KG.; 20,050 ANGLER-DAYS

LAKE TROUT: PROBLEM: 1. There is evidence that lake trout in some lakes are currently in an over harvest situation. Two lakes (Victoria Lake and Little Raleigh Lake) are implicated but the problem may be more extensive. Lack of current harvest data prohibits a complete assessment. The harvest data is based on 1974 and 1981 information.

Identification	Optional Tactics	Strategies	Tactics
i) Update harvest data on the heavier fished lake trout lakes. (Tactic a)	a) Conduct creel surveys and other assessment procedures to determine the extent of the problem.	Some lakes have been identified as being in a potential over harvest situation. The problem may be more widespread but data must be updated to determine the extent.	Tactic a) would allow for further evaluation of the problem prior to implementing any other tactic. This, however, would not correct the existing problem of over harvested lakes. The effectiveness of the reduction in harvest through tactics d) and e) may be questionable in some cases if the current harvest is by resident ice fishermen. Those tactics could also result in an economic loss to the tourist industry. The results obtained by implementing tactic b) may be difficult to measure. Tactic c) would correct the problem if it is a result of winter fishing. This may reduce opportunities unless anglers are willing to relocate to non-stressed waters. Tactic f) may be effective and would allow anglers the flexibility to plan when to exercise their opportunities.
ii) Align harvest of lake trout with the allowable yield by reducing harvest by all anglers. (Tactics b,c,f)	b) Implement a lake or zone specific catch and possession limit of 2 fish. c) Establish sanctuaries on specific lakes or fisheries zones for the period Jan. 1 to the third Saturday in May. d) Close the season on specific lakes or zones to non-resident anglers.	On some of the lakes, the majority of the pressure is winter fishing by residents, therefore, applying a strategy only on non-residents may not correct the problem. Relocation of anglers to other lakes could be the result of Strategies ii) and iii). This may not reduce angling opportunities and could reduce the harvest on stressed lakes.	Harvests may be reduced by Tactic g) by discouraging use but, this could result in an economic loss to the tourism industry. Implementation of any of the tactics by zone rather than on a specific
iii) Align harvest of lake trout with the allowable yield by reducing the harvest of fish by non-residents anglers. (Tactics b,d,e,f,g)	e) Reduce the open season for non-resident anglers to the months of July and August on specific lakes or for specific fisheries zones. f) Implement annual creel limits for lake trout in specific fisheries zones. g) Increase the fee of the species specific lake trout tag.		

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

lake basis may be preferable if the problem is widespread within a zone or limited to a specific zone.

LAKE TROUT: PROBLEM: 2. There is a conflict on Sturgeon Lake between the tourist resort operators and the commercial fishermen. This is a result of the perceived competition for lake trout and other sportfish species between user groups. The current harvest of sportfish from Sturgeon Lake is 2,733 kilograms (2,164 kg. by anglers and 569 kg. by commercial fishing) with an allowable yield of 32,902 kilograms.

Identification	Discussion
Optional Strategies	Optional Tactics
1) Improve communications between tourist operators and the commercial fishermen. (Tactics a,b)	<p>a) Provide a forum for the two user groups and MNR to meet and partake in a meaningful discussion to resolve the problem.</p> <p>b) Encourage each user group to become more aware of the operations of the other.</p>
Strategies	Tactics
Improving communications between the two user groups would appear to be the only viable option since data would indicate they are not really competing for the same fisheries resource.	<p>Tactic a) may resolve the problem but would require a firm commitment from each user group.</p> <p>Tactic b) would likely solve the problem but would require that each group take the initiative to contact the other, particularly on the water, to enter into discussions to resolve the concerns of each group.</p>

LAKE TROUT: PROBLEM: 3. In some localized situations on lake trout lakes where commercial fishermen exist there is a conflict between this user group and anglers. This is a result of the perceived competition for lake trout resources between user groups. Seven of the nine commercial fishing licences are for lakes containing lake trout.

Identification	Discussion
Optional Strategies	Optional Tactics
1) Increase angler awareness of the quota system for commercial fisheries. (Tactics a,b)	<p>a) Encourage the commercial fishermen to assist in making anglers aware of the effectiveness of the operation by personally contacting anglers during netting activities.</p>
Strategies	Tactics
All existing commercial fisheries are presently under strict quota control and monitored closely. Since the current harvest of lake trout by all users does not exceed the allowable yield it would appear there is not a true competition for	<p>Tactic a) would provide contact between user groups and allow anglers to obtain first hand information about commercial fishing. This has been conducted by some commercial fishermen and would appear to be effective.</p>

TABLE 3: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

- ii) The district feels that other optional strategies and tactics have addressed this problem under the commercial food fish target.

this species. The only viable strategy is to increase the knowledge of anglers on the restrictions of the commercial fisheries.

Tactic b) may not be as effective since it would not provide the "seeing is believing" concept.

LAKE TROUT: PROBLEM: 4. Localized habitat problems may still occur despite planning controls, as a result of incomplete inventory data. It is estimated that 13% (1600 ha.) of the unsurveyed lake area may contain lake trout.

Optional Strategies	Optional Tactics	Strategies	Tactics
<p>i) Continue updating information base on lakes suspected to contain lake trout in order to continue to provide protection through the areas of concern concept within the timber management planning process. (Tactics a,b)</p>	<p>a) Continue the aquatic habitat inventory program in the district, particularly in the vicinity of areas scheduled for timber harvesting.</p> <p>b) Identify species present in lakes in the vicinity of areas scheduled for timber harvesting by conducting test netting programs.</p>	<p>Lake trout are an extremely sensitive species and lakes containing this species must be afforded protection to prevent changes in water quality. The species composition in many lakes in the district is unknown. Current information suggests that some areas in the district contain more lake trout waters than other areas, however, this could be a perception due to lack of data in portions of the district. To ensure protection of this species it is necessary to update the information base in these areas prior to timber harvesting.</p>	<p>Both tactics presented would provide an increased information base. Tactic a) is more costly than tactic b) but may be preferred particularly on larger lakes which may contain discrete basins of lake trout. Tactic b) would be the least expensive and would permit a greater number of lakes to be checked at the same cost but could result in some lakes being unidentified. A combination of the two tactics may be the best approach, to provide more detailed information on some lakes, with test netting occurring in smaller lakes to simply identify species present.</p>

TABLE 3: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

LAKE TROUT: PROBLEM: 5. The current and projected use for lake trout indicate the demand is not as great as the allowable yield. Current and projected harvest of other sportfish exceed the allowable yield. If fishing success for other species decreases, increased pressure may be placed on the lake trout resource.

Identification		Discussion	
Optional Strategies		Strategies	Tactics
i) Monitor harvests of lake trout in relation to the allowable yield. (Tactics a,b)	a) Conduct creel surveys on some of the lake trout lakes to obtain a better estimate of current and projected use of the resource. b) Maintain records of lake trout creels checked in the field.	The current and projected demand for lake trout will be near the allowable yield. The allowable yield could be exceeded if anglers shift more of their effort towarded this species as a result of declining success for other species or if harvest controls are implemented on other species. Therefore, it is necessary that harvests of lake trout be monitored and if the allowable yield is exceeded harvest controls be implemented. If harvests are not monitored, the allowable yield could be exceeded with subsequent depletion of the lake trout fishery. This could result in the loss of angling opportunities and the associated economic benefits.	Tactic a) and b) would both provide harvest data. Tactic a) would give more precise data and could be implemented on either a lake or zone system. This tactic would be more costly to implement than tactic b) but may be preferable for lakes or zones that appear to receive heavier fishing pressure. Tactic b) would provide for the collection of data over a greater area and could be related back to proposed fishery zones. The data would not be as precise, but could give angler trend information and a general feel for overall harvest information. This could be used to implement specific surveys. The use of conservation officers may result in time loss from other duties. Tactic c) could result in the implementation of tactics for lake trout similar to those presented under Sportfish, Problem 1. The discussion would be similar. Experimental management could be implemented at the present time. Unique opportunities, such as, high quality trophy fisheries, may be possible. Due to the sensitivity of the species, care should be taken if any project is initiated.
ii) If harvest exceeds the allowable yield develop harvest controls on anglers. (Tactic c)	c) If harvest exceeds the allowable yield, implement controls on resident anglers, non-resident anglers or both. These could be similar to those presented under Sportfish, Problem 2.		

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

B. SPORTFISH - DLUG TARGET - 319,000 KG.; 159,500 ANGLER-DAYS
- INTERIM TARGET - 361,200 KG.; 180,600 ANGLER-DAYS

SPORTFISH: PROBLEM: 1. The current and projected harvests of walleye, northern pike and lake trout exceed the allowable yield for all sportfish species (walleye, northern pike, lake trout, smallmouth bass and brook trout) for the district overall. The major contributor to the problem is the over harvest of walleye. The sensitivity of lake trout to over exploitation must be considered. The harvest must be brought in line with the allowable yield.

Optional Strategies	Identification	Optional Tactics	Strategies	Tactics	Discussion
i) Control the sportfish harvest to the level of the allowable yield for the district. (Tactics a,b,c)	a) Reduce the harvest for walleye as per the tactics outlined for Sportfish, Problem 2. b) Maintain the harvest of lake trout at the level of the allowable yield by tactics previously described for Lake Trout, Problem 5.		Strategy i) would require controlling the harvest of sportfish to reduce the harvest to the level of the allowable yield. This would not reduce the fishing opportunities available but, could reduce the number of anglers, since catch per day and subsequently angler expectations and habits may have to change. This could result in an economic loss to the tourist industry. Strategy ii) could control the number of anglers to provide for a reduction in the harvest of fish to the level of the allowable yield. This may not reduce the catch per day but, could reduce the number of fishing opportunities available. This could result in a greater economic loss to the tourist industry than strategy i). A combination of the two strategies may be desirable or necessary, particularly in certain areas of the district.	Reducing the harvest of sportfish to the level of the allowable yield is essential. Tactic a) could provide for the implementation of tactics described for the strategies indicated for Sportfish, Problem 2. Discussion of those tactics will also apply here. Tactic b) may provide for a slight increase in the harvest of lake trout and therefore, less of a reduction in the harvest of other sportfish but, it may require maintaining the allowable yield by tactics presented for Lake Trout, Problem 5. The effectiveness of Tactic c) would be difficult to determine and will likely occur only if harvest controls are placed on other species. Tactic d) would not in itself accomplish strategy ii) but could assist in limiting an increase in anglers. This tactic could result in an economic loss to local industries and tourist outfitters. Tactic e) could result in a reduction in the number of	
ii) Control the number of anglers to bring the sportfish harvest in line with the allowable yield for the district. (Tactics d,e,f)	c) Encourage the harvest of other fish species such as smallmouth bass and perch. d) Control the tourist industry to prohibit or limit the expansion of existing facilities and prohibit new industry starts. i.e. no further disposition of crown land for commercial tourism purposes or relocation of existing facilities to underutilized areas in the district. e) Utilize the Crown Land Recreation program to be more restrictive to non-resident anglers not using the tourist industry.				

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

non-resident anglers. For example: Crown Land Recreation fees could be increased or additional no camping areas for non-residents designated. This may reduce the number of anglers and subsequently the sportfish harvest but, could also result in a loss to the local economy. Tactic f) may provide the best method for controlling angler numbers to ensure a reduction in the sportfish harvest but, could also result in the greatest loss of fishing opportunities and economic benefits.

SPORTFISH: PROBLEM1: 2. The current harvest of 261,216 kg. and projected harvest of 301,149 kg. of walleye exceed the allowable yield for this species (166,196 kg.) in the district as a whole. This will compromise this resource and the fishing opportunities derived from it.

Identification		Discussion
Optional Strategies	Optional Tactics	Strategies
<p>i) Align the harvest with the allowable yield by reducing the harvest of all anglers. (Tactics a through h and q)</p>	<p>a) Delay the opening of the walleye season to June 15 to ensure dispersal of the fish prior to season opening.</p> <p>b) Reduce the daily catch and possession limits of walleye. ex. limit of 3.</p> <p>c) Establish sanctuaries on known walleye spawning areas to provide for the protection of congregated fish.</p> <p>d) Establish an annual creel limit for this species.</p>	<p>The best solution to the problem might be to reduce the harvest to the level of the allowable yield. This could be accomplished by applying controls to all users or only to specific users. By implementing controls on all users it may result in loss of fishing opportunities to residents as well as non-residents. Controls applied only to specific users (ie. non-residents) may result in a greater economic loss to local communities and the province. It may be desirable to implement a combination of the two strategies by the use of the proposed fishery management zones.</p>
		<p>All of the tactics are designed to reduce the harvest of walleye. Tactic a) would result in a loss of fishing opportunities to residents as well as non-residents and a loss of economic benefits. Tactics i) and j) could result in a serious economic loss to the tourist industry with subsequent impacts on local communities and the province. Tactic c) may be as effective as tactic a) in some situations and would still provide fishing opportunities. Reducing the daily catch and possession limits from 6 to 3 walleye may not reduce the harvest by one half but could</p>

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

significantly lower it. Applying this only to non-residents may not lower the harvest to the allowable yield. Annual creel limits could be applied to all users or specific users (tactics d) and l)). Implementing these tactics on residents would be difficult if no angling licence were in place. Implementing an annual creel limit may be preferable to a reduced daily or possession limit since it would allow for a more refined method of control over the harvest. Tactics o) and m) may provide for a quality fishery in specific instances but may also limit opportunities and may have an impact on the tourism industry. Tactic f) and o) would not affect opportunities available, eventually could provide for a quality fishery in some cases, but may result in an economic loss to the baitfish industry and possibly the tourist industry. The effectiveness of this tactic would also be difficult to determine. Controlling users by implementing a limited species stamp (tactics g) and n)) may reduce harvest but may also reduce opportunities and result in economic loss. Establishing combination limits (tactics h) and p)) should reduce the harvest of walleye and still provide angling opportunities. It may also encourage the harvesting of less desirable species. However, this may result in some economic loss to the tourist industry. The proposed fishery

- f) Restrict the use of live bait or other gear on specific lakes or in specific areas or zones.
- g) Establish a species stamp which could be limited through a quota system.
- h) Establish combination daily catch and possession limits for specific lakes or zones, ie. walleye and smallmouth bass—limit of 7 fish of which not more than 3 shall be walleye.
- i) Closure of the walleye season to non-residents.
- j) Delay the opening of the walleye season to June 15 for non-resident anglers.
- k) Reduce the daily catch and possession limit of walleye for non-residents, ex. limit of 3 walleye.
- l) Establish an annual creel limit for this species for non-residents.
- m) Establish slot sizes and minimum size limits which reduce the overall for non-resident anglers but may produce larger fish.
- n) Limit the number of non-resident anglers by establishing a species stamp which could be implemented on a quota system with an allocation to the tourist and non-tourist industries.

ii) Align the harvest with the allowable yield by controls applied to specific users.
(Tactics l through q)

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

management zones could be used for refined implementation of some of the tactics. Tactic q) could be implemented on an experimental basis on specific lakes to determine its effectiveness. It could be applied to all users or specific users but, to be evaluated properly should likely be applied to all users. This tactic may be appropriate since the productivity of a lake is measured in weight of fish rather than numbers of fish.

- o) Restrict the use of live bait or other gear by non-resident anglers.
- p) Establish combination daily catch and possession limits for non-residents for specific lakes or zones. ex. walleye and smallmouth bass—limit of 7 fish of which not more than 3 shall be walleye.
- q) Establish an experimental weight limit for walleye on specific lakes. ex. walleye daily catch and possession limit of 2 kilograms round weight plus one fish.

SPORTFISH: PROBLEM: 3. On lakes where commercial fishing takes place there is a perceived conflict between this user group, anglers and the tourist industry. This is a result of competition for limited fishery resources.

Identification		Discussion	
Optional Strategies	Optional Tactics	Strategies	Tactics
1) The district feels that this problem will be resolved by strategies previously described for problems under commercial food fish and lake trout.			

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

SPORTFISH: PROBLEM: 4. Conflicts between the tourist industry and anglers exist in some locations. This is due partially to the anglers perception that access should be available to most waterbodies and the tourist industry's perception that access is detrimental to various aspects of the recreational opportunities they provide. Conflicts result from competition for limited fishery resources. This problem exists primarily in some of the more remote areas in the district.

Identification		Discussion	
Optional Strategies	Optional Tactics	Strategies	Tactics
i) Identify and designate some lakes for the primary use of the tourist industry . (Tactics a,b,c)	a) Control the type of user and user numbers through the boat cache program. b) Control access by means of physical controls, such as, removal of roads, gates, ditches, or other physical barriers, or by means of legislation under the Public Lands Act.	The best solution to this problem might be to designate lakes or areas in the district for primary use by specific user groups. Presently there are areas or lakes in the district that are almost exclusively used by one group or the other. In most instances conflicts arise when the lake or area becomes road accessible. By limiting the use of either group there may be a loss of fishing opportunities which could result in the loss of economic benefits derived from the resource. Providing lakes or areas for the primary use of the tourist industry may provide the industry with a known stability. Strategy ii) may limit tourism expansion in some areas but if implemented in conjunction with strategy i) relocation of some facilities (i.e. outpost camps) may be possible.	Tactic a) would be more effective in controlling the tourist industry, who tend to have more boats physically located on lakes, than individual anglers. However, it may provide some control of anglers on the more inaccessible lakes. Controlling access (tactic b) would afford some protection to the remote tourist industry but would not limit the opportunities to other anglers if they used alternate means of access (i.e. boat or aircraft). Tactic c) could reduce conflicts and provide a degree of stability to the tourist industry. It would be costly to the tourist industry and could result in a loss of economic benefits.
ii) Limit tourism expansion in specific zones or lakes and encourage use by other anglers. (Tactics a,c)	c) Encourage relocation of existing facilities to designated lakes or zones.		

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

SPORTFISH: PROBLEM: 5. Remoteness in the angling experience has changed as a result of increased road access. The natural setting and remoteness are two aspects of aesthetics which are highly valued by the tourist industry for their clientele. Remoteness is a concern primarily of those tourist operations presently inaccessible by road but the natural setting is valued by the majority of clientele.

Identification		Discussion	
Optional Strategies	Optional Tactics	Strategies	Tactics
<p>i) The same strategies as that presented for Sportfish Problem 4.</p> <p>ii) Continue to minimize the impact of road access on aesthetic values. (Tactics a,b)</p>	<p>a) The same tactics as Sportfish Problem 4.</p> <p>b) Continue to provide input to timber management planning process concerning roads and shoreline cutting.</p>	<p>In addition to the discussion on Sportfish Problem 4, the impact of road access on aesthetic values should continue to be minimized. Failure to do so could result in a loss of clientele to the tourist industry and subsequent economic loss to the area. Consideration must be given, however, to integrated resource management and the importance of the logging industry to the local and provincial economies.</p>	<p>Tactic b) will ensure that all values are taken into consideration in the timber management planning process via the application of the tourism guidelines. Some access or shoreline cutting may still occur but the impacts to the fishery and on aesthetics will be minimized.</p>
SPORTFISH: PROBLEM: 6. Localized habitat problems may still occur despite planning controls, as a result of incomplete inventory data. Currently 6% of the lakes by number and 68% of the water area have been surveyed.		Discussion	
Optional Strategies	Optional Tactics	Strategies	Tactics
<p>i) Continue to update the information base for all lakes in the district in order to continue to provide protection through the areas of concern concept within the timber management planning process. (Tactics a,b)</p>	<p>a) Continue the aquatic habitat inventory program in the district.</p> <p>b) Identify species present in lakes in the vicinity of areas scheduled for timber harvesting by conducting test netting programs.</p>	<p>Currently 32% of the district's water area remains unsurveyed. Species present in many of the lakes remain unknown. To provide habitat protection for sportfish, sportfish the best strategy is to update the information base and to provide continued input to the timber management planning process.</p>	<p>Both the tactics presented would provide an increased information base. Tactic a) is more costly than tactic b) but may be desirable particularly on larger lakes which may have more complex fish communities. Tactic b) would be the least expensive and would permit a larger number of lakes to be checked at the same cost but could result in some lakes being</p>

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

improperly identified. A combination of the two tactics may be the best approach, to provide more detailed information on some lakes, with test netting occurring in smaller lakes to simply identify species present.

SPORTFISH PROBLEM: 7. There is evidence that some of the easily accessible lakes are currently in an over harvest situation. This problem could be more extensive. Lack of current harvest data prohibits a complete assessment. This situation could be compounded through the planned disposition of crown land for cottage lots.

Identification	Optional Strategies	Optional Tactics	Discussion
<p>i) Update harvest data on heavier fished lakes. (Tactic a)</p> <p>ii) Reduce the harvest by implementing lake specific or zone specific controls on all anglers. (Tactics b,d)</p> <p>iii) Reduce the harvest by implementing lake or zone specific controls on specific users (residents, non-residents). (Tactics b,d)</p> <p>iv) Update harvest data on lakes scheduled for cottage lots to determine if an over harvest situation exists. (Tactics a,c,d,e)</p>	<p>a) Conduct creel surveys and other assessment procedures to determine the extent of the problem.</p> <p>b) Tactics previously described for the problem of the over harvest of walleye could be applied on a lake or zone specific basis.</p>	<p>a) Conduct creel surveys and other assessment procedures to determine the extent of the problem.</p> <p>b) Tactics previously described for the problem of the over harvest of walleye could be applied on a lake or zone specific basis.</p>	<p>Strategy i) would allow for the refinement of harvest data prior to implementing any harvest controls. Current harvest data, in relation to the allowable yield, suggests that a number of lakes containing sportfish must be over harvested. Therefore, this would not provide an immediate solution to the problem. Strategy ii) or iii) could be implemented to provide a partial solution with refinement occurring as harvest data becomes available. Discussion on the implementation of strategies on all users versus specific users is presented under Sportfish, Problem 1. Strategy iv) would allow for harvest assessment on lakes scheduled for cottage lots. Since cottages may increase fishing pressure this may be beneficial to prevent compounding</p>
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protection for the sportfish resource. Tactic e) would allow for the collection of data prior to the disposition of cottage lots. This could prevent increased pressure on a stressed fishery but may cause a short term shortage on the availability of cottage lots.

any existing over harvest situations or increasing the number of over harvested lakes.

c) No disposition of cottage lots on a lake prior to conducting harvest assessment.

SPORTFISH: PROBLEM: 8. Smallmouth bass and perch are underutilized in the majority of the lakes where they occur. Perch provides an allowable yield of 50,000 kg, and could provide an additional 25,000 angler-days per year if the full potential was realized.

Identification		Discussion	
Optional Strategies	Optional Tactics	Strategies	Tactics
1) The district feels that this problem should resolve itself by strategies and tactics previously described for other problems.		Strategies and tactics presented for the sportfish over harvest problem and the relationship between this and the current harvest per angler-day of 2.5 kilograms may encourage the taking of more smallmouth bass and perch. This will likely occur only if controls are implemented limiting the harvest of other sportfish. Any increase in the utilization of these species would be difficult to ascertain.	

TABLE 8: OPTIONAL MANAGEMENT STRATEGIES & TACTICS RELATED TO THE ACHIEVEMENT OF LAKE TROUT AND SPORTFISH TARGETS

SPORTFISH: PROBLEM: 9. Current and projected use in relation to the allowable yield of sportfish would indicate that Sturgeon Lake is not being utilized to its potential. Controls presently exist limiting non-resident use and curtailing further development.

Identification		Discussion	
Optional Strategies	Optional Tactics	Strategies	Tactics
<p>i) Update data on Sturgeon Lake to determine the extent of the problem. (Tactics a,b,c)</p> <p>ii) Remove controls on Sturgeon Lake to encourage an increased use by non-resident anglers. (Tactics d,e)</p>	<p>a) Conduct creel surveys to update harvest data.</p> <p>b) Conduct studies on the fish populations to provide for refinement of allowable yield.</p> <p>c) Determine the relationship between tourist camp occupancy rate and lake utilization.</p> <p>d) Remove prohibition on non-resident camping.</p> <p>e) Remove prohibition on development on Sturgeon Lake.</p>	<p>Strategy i) would allow for the collection of data to refine the current estimate of harvest and use. This may be beneficial since there are gaps in some of the existing data such as potential user information. Implementing strategy i) prior to considering strategy ii) may not provide an immediate increase in angler opportunities or encourage redistribution of fishing pressure from other lakes to Sturgeon Lake. Strategy ii) would encourage redistribution of anglers but may also place undue stress on all or a portion of the fishery.</p>	<p>Tactics a), b) and c) would all provide different approaches to updating data on Sturgeon Lake. All three of these tactics would require co-operation from the tourist operators located on the lake. The collection of this information may require one or more years which could result in a postponement of a decision regarding existing controls. Tactics d) and e) would allow for an immediate increase in use of the lake but the possible effects on the fishery is unknown.</p>

PUBLIC REVIEW

The public is invited to review and comment on this document and is encouraged to provide input throughout the entire planning process. A questionnaire is provided to assist in obtaining your comments and in tabulating input received. Questionnaires and comments will be received until October 29, 1986 at 5:00 p.m. Please note that questionnaires and comments received become public documents available for public review. Your comments will assist in the preparation of a draft fisheries management plan, which will also be available for public review.

"WE SHOULD ALL BE CONCERNED ABOUT THE FUTURE BECAUSE WE WILL HAVE TO SPEND THE REST OF OUR LIVES THERE."

-C. Kettering

GLOSSARY

Allowable Yield

The yield by species as a result of partitioning the potential yield. The sum of the allowable yields by species will not necessarily add up to the potential yield.

Angler-day

While it is usually accepted that any amount of effort in a day constitutes one angler-day, for the purposes of converting angler hours to angler-days, 4 hours will be used.

Aquatic Habitat Inventory

A basic study of a lake to determine species present, water chemistry, depth, water volume and other characteristics. The information obtained can be used to determine the potential and allowable yields of the lake.

Areas of Concern

Areas requiring particular management prescriptions in order to maintain or improve resource values such as fish and wildlife habitat, forest genetic resources, scenic areas and other recreational and tourism values.

Baitfish

Any fish that are legally harvested by the commercial baitfish industry.

Coldwater Lakes

Those lakes having characteristics which would support Salmonids.

Coldwater Streams

Those streams having characteristics which would support Salmonids.

Commercial Fish

Any fish that are legally harvested by the commercial fishing industry.

Creel Survey

A survey of anglers to determine angler origin, species of fish caught, weights of fish and number of hours fished. Other information such as gear being used and information on the age of fish may also be collected.

Critical Fish Habitat

Any fish habitat required for the maintenance of a healthy fish population or otherwise identified as essential to the achievement of the Ministry's fishery program objectives.

Crownland Recreation Program

An initiative implemented in 1984 within the Northwestern Administrative Region. The intent of this initiative was to encourage non-Ontario based non-residents to use existing tourist facilities and thereby contribute to local and provincial economies through use of Ontario's fishery resources and to generate revenue from non-resident use of crown land. In addition, this program involves the designation of areas closed to non-resident camping to redistribute use from sensitive fisheries.

Forest Management Agreement

A contractual agreement between the crown and certain forest companies whereby a company undertakes forest management practices (roads, harvesting, regeneration and forest tending) on behalf of the Ministry of Natural Resources. The purpose of the Forest Management Agreement is to provide for a continuous supply of forest products to the Agreement-holder and to ensure the forests are harvested and regenerated on a sustained yield basis.

Goal

A general purpose to which the ministry aspires.

Harvest

Fish taken and kept by resource users.

Kame

A mound composed chiefly of gravel or sand, whose form is the result of original deposition modified by settling during the melting of glacier ice against or upon which the sediment accumulated.

Management

The judicious use of means to achieve ends. Management may have various levels of intensity. For example, if a high degree of technology is used, or if very careful tending is given, the management is high level.

Nature Reserve

An area selected to represent the distinctive natural habitats and landforms of the Province, and protected for educational and research purposes to benefit present and future generations.

Non-Resident

An angler whose principle residence is outside of Ontario.

North or (Northern) Ontario

Northwestern and Northeastern planning regions include the following districts: Dryden, Fort Frances, Ignace, Kenora, Red Lake, Sioux Lookout, Atikokan, Geraldton, Nipigon, Terrace Bay, Thunder Bay, Blind River, Espanola, North Bay, Sault Ste. Marie, Sudbury, Temagami, Wawa, Chapleau, Cochrane, Gogama, Hearst, Kapuskasing, Kirkland Lake, Moosonee, and Timmins.

Objective

A quantifiable and attainable end, which the ministry's efforts are intended to accomplish.

Occasion

A measure of actual recreational use describing the number of times a recreation reserve or facility is used by individuals in a given time period. An occasion is not considered to exceed one day in duration.

Opportunity

A measure of recreation supply which is used to describe the number of times a resource or facility can be used (occasions of use) in a given time period. An opportunity is considered not to be greater than one day.

Outpost

Housekeeping accommodations usually in remote areas with limited access.

Over Harvesting

Harvests of fish by users which exceed the annual allowable yield.

Potential Yield

The amount of fish flesh that can be removed from the water on a sustained basis.

Planning Area

The area for which a planning process is carried out, and for which a resource management plan is prepared.

Policy

The decision concerning the objectives to be achieved and the means of achieving them. For resource management planning, we are mainly concerned with the objectives, targets, strategies and tactics.

Recreation Park

An area which supports a wide variety of outdoor recreation opportunities for large numbers of people in attractive surroundings.

Resident

An angler whose principle residence is in Ontario. A local resident would be one who can fish an area on a day use basis, i.e. travel to the area, fish, and return home on the same day.

Resource Management

The wise use of a particular resource, such as fish, to achieve a specific end.

South or (Southern) Ontario

The southern planning region includes the following districts: Parry Sound, Breckenridge, Minden, Algonquin Park, Bancroft, Pembroke, Owen Sound, Wingham, Chatham, Simcoe, Aylmer, Huronia, Lindsay, Maple, Cambridge, Niagara, Tweed, Napanee, Carleton Place, Brockville and Cornwall.

Sportfish

Any fish that are legally caught by angling.

Strategy

Planned actions or measures to achieve a desired end.

Tactic

A method devised to achieve one or more strategies.

Target

A quantified end to be achieved or completed by a specific date.

Underproducing Waters

Waters from which the production is constrained because of stresses such as water quality, species composition, over harvest, undesirable species.

Warmwater Lakes

Those lakes other than coldwater lakes.

Warmwater Streams

Those streams other than coldwater streams.

Waterway Park

An outstanding recreational water route with representative natural features and historical resources which provides high quality recreational and educational experiences.

Work Plan

A plan prepared annually which defines what management activities are to be undertaken for that year.

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